



**APPENDIX**

**Volume IV—Pages 1365-1718**

SEP 26 1973

MICHAEL BOGAK, JR., CLERK

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**Supreme Court of the United States**

**OCTOBER TERM, 1973**

**No. 72-402**

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**UNITED STATES OF AMERICA**

*Appellant*

**v.**

**GENERAL DYNAMICS CORPORATION, THE UNITED  
ELECTRIC COAL COMPANIES, AND FREEMAN  
COAL MINING CORPORATION**

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**ON APPEAL FROM THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS**

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**JURISDICTIONAL STATEMENT FILED SEPTEMBER 8, 1972  
PROBABLE JURISDICTION NOTED DECEMBER 11, 1972**



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\* Not reprinted in Joint Appendix. Citation is to appendix of Jurisdictional Statement.

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[1507]            NORMAN W. MOSER,

called as a witness by the defendants herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KEMPF:

Q Please state your full name, sir, and spell your last name.

A Norman W. Moser; M-o-s-e-r.

Q What is your home address, Mr. Moser?

A 440 North 22nd Street, LaCrosse, Wisconsin.

Q By whom are you employed, sir?

A I am employed by the Dairyland Power Cooperative with offices at LaCrosse, Wisconsin.

[1508] Q What position do you hold with Dairyland Power Cooperative, Mr. Moser?

A I am chief engineer.

Q Do you have anything to do with Dairyland Power Cooperative's power production activities?

A I am in charge of power production for Dairyland.

Q How long have you been with Dairyland Power Cooperative?

A I started with Dairyland Power Cooperative as a turbine operator in Genoa Plant 1 in 1941. I was transferred to the general office in 1945 and became chief engineer in 1951. However, I have been in charge of power production since 1945.

Q In your capacities both in charge of power production and as the company's chief engineer, have you taken an active participation in the company's plant construction and fuel procurement activities?

A Yes, I have.

Q Would you briefly describe for us the general area served by Dairyland Power Cooperative?

A We serve the rural areas in western Wisconsin, the northwestern tip of Illinois, the southeastern portion of Minnesota and the northeastern portion of Iowa.

[1509] Q Mr. Moser, I am going to hand you what has been received in evidence as Defendants' Exhibit

145. This is a map entitled "Service Area, Dairyland Power Cooperative, LaCrosse, Wisconsin," as of June 1, 1968.

If you would look at that, please, tell me does that accurately portray the specific service area served by Dairyland Power Cooperative?

A Yes, it does.

Q What electrical generating facilities does Dairyland Power Cooperative have, Mr. Moser?

A Well, we have three generating stations on the Mississippi River, one at Cassville, Wisconsin, that has a capacity of about 52,000 kilowatts. We have a station at Alma, Wisconsin, that has a capacity of 205,000 kilowatts. At Genoa, Wisconsin, we have our original steam generating station of 14,000 kilowatts, and our two newest generating stations, a nuclear generating station of 60,000 kilowatts, and a new coal-burning station that went into operation last year of 350,000 kilowatts.

In addition, we have diesel stations, one diesel station at Twin Lakes, Minnesota, of 10,000 kilowatts, and one at Chippewa Falls, Wisconsin, of 3,200 kilowatts, and a hydro station on the Flambeau [1510] River near Ladysmith, Wisconsin, of 20,000 kilowatts.

Q From whom does Dairyland Power Cooperative secure the coal which is burned at its coal-fired generating stations?

A Well, since our plants are on the Mississippi River, we secure the coal from the Belleville area of Illinois as a general rule. There are exceptions of receiving coal in small amounts from other areas along the river.

[1511] Q You indicated that you at some time last year brought in your newest coal-fired station at Genoa. When did you bring that into operation last year?

A That station went into operation in July of 1969.

Q Did this materially increase your coal requirements?

A By a substantial amount.

Q What did that lead to in terms of acquiring additional coal?

A In acquiring additional coal last year, that coupled with some of the problems in the Belleville area, required us to get into the West Kentucky fields a little more than we had in the past. There were several factors.

First, the river was in flood stage, putting locks out of operation for about one month last year that thoroughly fouled up our shipping schedule. We must receive all of our coal on the river during the time it is open, about seven months of the year. One of these months was lost due to flooding.

With our additional requirements immediately behind the flooding of the upper river, the mines in the Belleville area were subject to problems that were weather-induced, flooding in this area, in the Belleville [1512] area. So, this resulted in us looking in particularly the West Kentucky fields for additional coal.

Q How was that coal shipped to you?

A It was shipped by barge. We have no facilities for handling rail coal in large quantities.

Q Are you encountering the same weather difficulties this year? I realize the season is not substantially under way, but thus far this year, have you encountered these difficulties?

A No. The navigation season looks like it is opening in a much better note than it did a year ago, because at this time last year, we were approaching the flood stage. At the present time, there is no indicated flood on the upper Mississippi River.

Q As a result, have you increased, again, your shipments of coal from the Belleville district?

A Yes. The coal is coming fairly well on schedule this year.

Q I would now like to show you what has been received in evidence as Government Exhibit 90, a table referred to as "Common Known Customers of The United Electric Coal Companies and Freeman Coal Mining Corporation," showing destination points. This particular exhibit is for the year 1967.

[1513] There are similar exhibits designated as Government Exhibits 88 and 90 which cover much the same information but which are for the years 1965 and 1966.

THE COURT: You said 88 and 90. Do you mean 89?

MR. KEMPF: Yes, 88 and 89. I am sorry.

THE COURT: All right.

MR. KEMPF: This is 90.

THE COURT: Yes.

MR. KEMPF: If I may approach the witness, your Honor—

THE COURT: You may.

BY MR. KEMPF:

Q I would now hand you this exhibit and refer you to page 2 thereof.

The first entry on page 2 thereof refers to Dairyland Power Cooperative. It indicates that Dairyland Power Cooperative has received shipments at, I believe, both its Alma and Cassville Stations from Freeman and United Electric.

My question is, do you consider Freeman and United Electric to be competitive for the business of those stations.

A I do not consider them directly competitive. The product we get from Freeman is dust. This is shipped [1514] as a by-product to us.

We do have limits in how much we can receive of this material.

Q What do you receive from United Electric?

A We receive the wash screenings from the Fidelity Mine.

[1515] Q What type of purchasing system does Dairyland Power follow in securing its coal, Mr. Moser?

A Most of our coal is on long-term contracts.

Q Of how long a duration are these?

A These are from 10 to 20 years.

Q Why do you secure your coal under these type of arrangements?

A Well, because of our substantial investment in power plants, why, we must have some assurance of our supply.

Q What restrictions, if any, are there with respect to the coal which can be burned in the boilers operated by Dairyland Power Cooperative?

A Well, while we request design flexibility as much as possible, the modern boilers do have to be designed around the specification of coal. This deviation from this coal begins to cause operating problems such as loss of efficiency or even inability to keep the unit either at its rated load or on the line at all.



**Q** What about your newest station that you described that came into operation last summer at Genoa? Does that have a narrower, a wider or about the same range of specification regarding coal characteristics as your older plants have?

[1516] **A** As these units get larger and more sophisticated, their ability to handle a range of coal becomes narrower.

**Q** Have you had any actual experiences where the use of a type of coal which did not meet the specifications of your boilers led to difficulties such as you have described?

**A** In this new unit, as I mentioned, we had to go to some west Kentucky fields that we were not so sure of the quality of the coal. As a result, we loaded this new unit with slag to the extent that it was off the line, and we had to get in and remove the slag. The first attempt at this was done with jack hammers. However, this was not too effective. So, finally, we used the jack hammers to drill holes and used dynamite to blast the slag out. We estimated between 40 and 50 tons of slag accumulated in this boiler.

**Q** I am sorry, I didn't pick up the tonnage amount.

**THE COURT:** Read the answer.

**MR. KEMPF:** Just the latter portion.

**THE COURT:** Just the last part.

(Record read by the reporter.)

**BY MR. KEMPF:**

**Q** 40 and 50 tons of slag?

**A** Yes.

[1517] **Q** You mentioned that of your two newest facilities, one is the coal-powered station at Genoa, to which we have just been referring, and the other you indicated also at Genoa is your nuclear-powered station.

Has Dairyland Power Cooperative made any decision as to what fuel will be used at the next station you add to your system?

**A** No, we haven't decided what fuel will be used in the next station. We are continually comparing nuclear coal. Unfortunately, we have to look at the air

pollution problems caused by coal. We are looking at gas and oil as possible alternate fuels.

Q Are any of the coal-fired stations which Dairyland Power operates, Mr. Moser, near metropolitan areas?

A No, they are not. You wouldn't think that we would have the problem of air pollution, but we have been sued at our Alma station by three farmers in the area. This suit has led to a landmark decision by the Wisconsin Supreme Court, indicating that we are a nuisance and that the farmers in the area have the right to sue us for damages.

Q This is damage caused by what?

[1518] A This damage, the suit was based on damage caused by sulphur oxide emissions.

[1519] Q And what was the damage done to? The farmers individually?

A The damage was done primarily to the alfalfa crops, some of the trees on the farm, and some damage to the farm buildings themselves.

Q When did this decision come down?

A This decision came down in December of 1969.

Q Do you and other executives of Dairyland Power take an active interest in the subject of the regulation of air pollution?

A Yes, very much so. Our general manager, John Madgett, was on the President's Environmental Committee, and at the present time the State of Wisconsin is in the process of establishing air pollution rules. I have attended a number of those hearings.

In addition to that you might say I am quite a regular visitor to the City Council of Alma, Wisconsin, and, well, just last week I had to face some of the teach-in people that are getting ready for the environmental teach-in next week.

Q Will the subject of air pollution have any effect on the fuel purchasing decisions of Dairyland Power Cooperative?

A It necessarily will have to, because the [1520] regulations are coming. We in Wisconsin do not know exactly what they will be. We have a general idea that the proposed rules are very strict on particulate emission.



As yet they have not established a criteria for gaseous emissions.

Q Are the people in the rural areas you serve concerned with air pollution?

A They definitely are. They feel that they have clean air now and they intend to keep it that way.

Q As a result of the impact of the air pollution regulations do you think this may affect your fuel purchasing in the future?

A Yes. We have to look at ways of abating the pollution in existing plants and in future plants. It will have a definite bearing on the design of the fuel that we burn. The regulations are dictating to us to a certain extent the type of fuel that we will be able to burn.

[1521] Q Mr. Moser, what effect, if any, does the combined ownership of United Electric and Freeman by General Dynamics have on the competition for Dairyland Power Cooperatives' fuel business?

A We do not feel that it has any detrimental effects, primarily because we use different types of coal from each of the companies. In our long-term contracts, we are not sure and United Electric is not sure of their reserves, and we feel that in the competitive field of coal, strong companies are better than a great number of companies.

MR. KEMPF: No further questions at this time.

THE COURT: You may cross examine.

### CROSS EXAMINATION

BY MR. FUTTERMAN:

Q Mr. Moser, you stated on your direct examination that your company will be forced to consider other types of fuels in its future decisions. At the present time is Dairyland Power purchasing any interruptible gas?

A Yes.

Q And you confine those purchases to the summer months, do you not?

A Yes. These gas purchases are for the small [1522] diesel station that is less than 1 percent of our total generation.

Q You could not afford to buy gas at the firm rate, could you?

A In view of the air pollution, we do not know all of the answers yet. We may have to buy gas at firm rate.

Q Didn't you tell me the other day when I spoke to you on the phone that the Wisconsin Public Utility Commission told your company it should not ask the gas company to increase the supply of natural gas being supplied your company because of the shortage of natural gas in Wisconsin?

A We received a letter from the Public Service Commission saying in effect that until further gas was allocated to Wisconsin, the new pipeline would likely not be built.

Q So as of the present time you would not be able to increase the supply of interruptible gas or contract to purchase firm rate gas to fuel any future generating stations, is that correct?

A The only place we have a gas line now is in the diesel station.

Q Is that a peaking station, sir?

A It is used for peaking largely.

. . . . .

[1524] Q You testified you also would consider oil. Are you presently burning oil at stations other than your diesel station?

A Only light-off oil. We are not burning any of the heavy oils.

Q Light-off oil is not used for purposes of generating electricity, is that correct?

A No, it is not.

Q At the present time oil is not priced competitive with coal for the purpose of generating electricity within your system, is it?

A On similar equipment we still have to consider all of the factors of meeting air pollution control regulations, particularly in existing units that are very expensive to put additional equipment on, and in the case of sulphur emissions, why we are not to the point that there is equipment that can be installed that will work satisfactorily to our knowledge.

Q You are experimenting at the present time. Are you negotiating with Foster-Wheeler Company at the present time to install some equipment which may be designed for the purpose of controlling SO<sub>2</sub> emissions?

A We are negotiating to enter into a research project with the Foster-Wheeler Company on the process [1525] that is as of yet untried, and Foster-Wheeler has asked to work on one of our units, and we are very happy to work with them in the hope that we will achieve a breakthrough in the recovery of the sulphur oxide gases.

\* \* \*

[1529] Q (By Mr. Futterman) When you talk about the air pollution problems your company has had, isn't it true that until the very recent past, your generating facilities did not have electrostatic precipitators on them?

A The only electrostatic precipitator we have at the present time is the new unit at the Genoa Station, the 350,000 megawatt unit.

Q Isn't it true that most of the large utilities have had electrostatic precipitators on their units for some time?

A They have on their larger units. The smaller size, such as we have at Alma, for instance—it has not been the common practice in an area such as the Alma plant is located into have electrostatic precipitators. They are equipped with mechanical precipitators. They will not meet the proposed air pollution control regulations of the State of Wisconsin with mechanical precipitators.

[1530] Q Would they meet these regulations with electrostatic precipitators?

A They would, provided we know the sulphur content of the coal, because an electrostatic precipitator has to be designed to a certain extent around the sulphur content of the coal. If we would go to a low sulphur coal at the new station at Genoa, the electrostatic precipitator would lose enough of its efficiency to cause a particulate problem.

Q That is because with low sulphur coal you have a greater proportion of particulate matter than you do with the higher sulphur coal?

A No. It is a matter of ionization of the flue gas.

Without the sulphur dioxide present, the ionization does not occur as readily as it does with the sulphur dioxide present, so the two problems are interrelated.

Q Mr. Moser, when you are receiving a barge load of coal, how do you determine which of your stations that barge load should be assigned to?

A To some extent we delegate this to the people that handle our shipments. Generally speaking, we do not designate, except in some cases, the coal that we would like to go to one station.

. . . .

[1534] Q What percentage of the coal that your company is currently receiving would you estimate is purchased on the spot market?

A My estimation now would be about 40 percent.

Q And that coal comes from the Belleville district, the southern freight rate district, and west Kentucky, does it not?

A Primarily west Kentucky.

Q In the past you have purchased some coal from Fulton County, have you not?

A Very small amount.

Q In the event that you would have trouble satisfying your coal requirements from Belleville freight district, from the southern freight district and from west Kentucky, would you consider the possibility of purchasing coal from the Fulton-Peoria freight rate district?

A Purchasing coal in the Fulton County area has been a rather difficult thing for us to accomplish. It is a long river haul. We do not have the rail handling facilities. As I say, in the past we have purchased some of this coal, and it has given us some operating problems.

. . . .

[1540] Q Once having decided the point from which or the coal field from which the coal for this new station would originate, would you then design the boiler to accommodate that kind of coal or coals if more than one field is involved?

A We would try to get as much range as we could in there, but we would have to specify the coal that we

expected to get for this new unit and then request as big a range as we could talk the boiler manufacturers into bidding on.

As I mentioned earlier, the larger and more sophisticated units are getting narrower in their range of coal burning.

Q Mr. Moser, isn't it a fact that Freeman and United Electric are currently supplying coal which is consumed in both your Alma and Genoa generating stations?

A Yes.

Q Isn't it true, also, that Freeman has the option of furnishing this coal from any of its southern Illinois mines?

A The contract with Freeman is for the dust. I believe it lists three mines, as I recall, three or four. I am not sure which, but the contract does call for a minus-10 pulverizer mix or a dust product.

[1541] Q At the present time, do both United Electric and Freeman salesmen call on your company?

A Yes.

Q Isn't it a fact, Mr. Moser, that the price of the dust is determined by its BTU content?

A No. These contracts, of course, were entered into some time ago. At that time—and an escalation has changed these, the relationship. But at the time we entered into the contract for the dust, it was our lowest BTU cost, and no other supplier would attempt to meet it.

Q That is not true today, though, is that correct?

A I am not sure if that is true today because of the escalations that have gone into effect, because the escalations for labor in deep mines have been more. There has also been some freight increases.

Q Isn't it true that at the present time, you are receiving coal from the United Electric Fidelity mine with a BTU value of 11,400 and a cheaper delivered cost than the dust with the same BTU value that originates in the Freeman mines?

A That is possible that that has crossed. I haven't checked that yet this year or last, but it is [1542] possible that that has crossed with the freight increase. They are both on long-term contracts with escalation. The es-



calation on deep mines has been more for labor. Since the southern Illinois freight rate is greater, the freight rate increase has been more than some of the Belleville increases.

[1543] Q Isn't it true that you are receiving coal screenings from southern Illinois at a delivery cost which is cheaper per BTU basis, per million BTU basis, than the dust received from the Freeman Mines in the southern freight rate district?

A That might have been for the dog-hole coal that we received later. I don't believe we are receiving any coal at the present time on that basis from southern Illinois.

Q Mr. Moser, isn't it true that the screenings and the dust are consumed in the same facilities?

A Yes. They are mixed before they go into our facilities.

Q When the screenings are pulverized, they go into the boiler in the same form as the dust, do they not?

A Yes. They are pulverized together.

Q For every ton of dust that you consume, that means that you do not consume a ton of screenings, is that correct?

A Yes. Up to the limit that we can receive and handle and mix the dust, which I have prescribed an arbitrary limit of approximately 10 percent, yes.

Q The dust which your company consumes, that is delivered to you on barges, is it not?

[1544] A Yes.

Q All the screenings which you purchase are delivered on barges, are they not?

A Yes.

Q The dust and the screenings are used for the same purposes, to generate electricity, is that right?

A Yes.

Q Mr. Moser, in regard to your testimony concerning the possibility of using Western coal for the purpose of generating electricity, didn't you tell me that you thought there might be a shortage of railroad cars which could be utilized to move coal to the Midwest markets from the West?

A That is a problem that I think we might have at the present time in transporting this coal. I have not explored that to the extent of being told solidly this. My only contact with the railroad people were before the merger of the Great Northern and the Burlington was in effect. They said, "We will talk about that after the merger." I haven't made the move and neither have they to further discuss it.

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[1549]

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

No. 67 C 1632

UNITED STATES OF AMERICA, PLAINTIFF

vs.

GENERAL DYNAMICS CORPORATION; THE UNITED ELECTRIC COAL COMPANIES; AND FREEMAN COAL MINING CORPORATION, DEFENDANTS

Before HON. EDWIN A. ROBSON, Judge,  
Tuesday, April 14, 1970,  
10:30 o'clock a.m.

PRESENT:

MR. JOHN THOMAS CUSACK,  
MR. ROBERT L. EISEN,  
MR. RONALD L. FUTTERMAN,  
MR. HUGO SIMS, and  
MR. RICHARD J. BRAUN,  
appeared for Plaintiff;

MR. HAMMOND E. CHAFFETZ,  
MR. REUBEN L. HEDLUND,  
MR. DONALD G. KEMPF, JR., and  
MR. RICHARD H. IRVING, III,  
appeared for Defendants.

ALSO PRESENT:

DR. PETER STEINER.

. . . .

[1554]

NORMAN W. MOSER,

called as a witness by the defendants herein, having been previously duly sworn, resumed the stand and testified further as follows:

CROSS EXAMINATION (continued)

BY MR. FUTTERMAN:

. . . .



[1564] Q Mr. Moser, on your direct examination, you stated that you were not sure and United Electric is not sure of their reserves. What did you mean by that?

A The last time we requested United Electric to extend the period of our long-term contract, they put in a provision on the last two years of the contract, "Subject to availability of the coal."

Q Did you examine United Electric's reserves books at that time?

A No, we did not examine their books.

Q Has United Electric ever offered to supply you with coal from the McDonaugh-Schuyler County area in Illinois?

A No, they have not.

Q If I were to suggest to you that the coal in the McDonaugh-Schuyler County area is a better quality coal than the Fulton-Peoria coal, would you be interested in purchasing it?

MR. KEMPF: I am going to object unless the witness knows where the McDonaugh-Schuyler area is. I do not think Mr. Futterman has laid a proper foundation.

BY MR. FUTTERMAN:

Q Do you know where that area is?

A No, I am not aware.

[1565] Q Mr. Moser, I direct your attention to what has been received in evidence as Government Exhibit Nugent Deposition Exhibit 38, and I point on the map to the McDonaugh-Schuyler County area. If you would like to come over and take a look at it, you can.

Do you have my question, sir?

THE COURT: Read the question.

(Question read by the reporter.)

BY THE WITNESS:

A It is possible. However, from looking at the map, it appears that there would be a transportation problem, that this would have to go down probably the Illinois River and back up the Mississippi River.

I know of no loading docks in that area on the Mississippi River or the ability to get it over there.

BY MR. FUTTERMAN:

Q Do you think it would cost more money to transport coal from that area in the manner you have just described than it is currently costing you to transport coal from west Kentucky to your generating stations?

A I would expect so.

Q You testified on your direct examination that you rely on the Belleville district for substantial tonnages of coal, is that correct?

A Yes.

[1566] Q I should like you to assume that one of your suppliers in the Belleville district has undeveloped reserves in that freight rate district, and assume further that the supplier is controlled by a large company which is not permitting the supplier to develop these Belleville reserves to their fullest potential. Would that be adverse to your company?

MR. KEMPF: I object, your Honor. Again this is similar to the questions I have objected to before. I think again the assumption is based upon facts which are not in evidence. I have no objection if he wishes to reframe it in terms of a hypothetical question, but in the terms of the question, that is, based upon assumptions on the record, I do not think there is any evidence to that effect.

THE COURT: Is there anything in the record to that effect?

MR. FUTTERMAN: Your Honor, I believe I did phrase it in the form of a hypothetical question. I think the record clearly shows that United Electric has reserves in the Belleville freight rate district and these reserves are not being developed at the present time.

I think there has been testimony in the record that these reserves may be developed at a future date.

[1567] MR. KEMPF: There is evidence of that, but Mr. Futterman's characterization of the reasons for that are part of his question.

THE COURT: Read the question.

Q (Read by the Reporter.)

THE COURT: He may answer.

## BY THE WITNESS:

A Based on an assumption that reserves are not being developed, it would be adverse to our company.

## BY MR. FUTTERMAN:

Q Mr. Moser, do you know that there is a coal unloading dock at Warsaw on the Mississippi River just west of the McDonough-Schuyler County area, and that this dock is served by the Toledo, Peoria & Western Railroad?

A We have never used this dock. I am not fully aware of its capability.

Q You have testified that you have had active participation in plant construction and fuel procurement and because of the substantial investment in power plants you need the assurance of a supply which is provided by long-term contract.

Have you participated in the negotiations of coal contracts?

[1568] A Yes, I have.

\* \* \*

Q Isn't it true that pursuant to the contract with United Electric, Dairyland Power Cooperative may have coal consigned to its Alma, Cassville and/or Genoa [1569] stations?

A Yes.

Q Mr. Moser, isn't it true that the price which you pay for coal may be renegotiated each January under the terms of that contract?

A I believe there is that provision in that contract. We usually have a provision for some renegotiation. However, we also have the escalation provisions in all of these contracts, which are tied to supplies and to labor cost.

[1570] Q Is it not true that if the parties fail to reach agreement with regard to this price negotiation, the contract is then cancelled for the succeeding 12 months and is again subject to price renegotiation the following January?

A That could be a provision. I haven't read that contract that recently.

Q Would that be a typical kind of a provision in a long-term contract?

A We have had provisions that the price was subject to negotiation or subject to negotiation if price did not meet substantial competition. Now, I am not sure if that is in the present United Electric contract or not, that provision.

Q Mr. Moser, at the present time are Freeman and United Electric supplying the Genoa station?

A Yes.

Q Did you ever have any conversations with any officers of the defendants, that is either Freeman or United Electric, in regard to this case?

A With the officers? I believe not.

Q Did you have any conversations with any representatives of the defendants in this case?

A We have had some conversations with the counsel.

\* \* \* \*

[1573]

#### REDIRECT EXAMINATION

BY MR. KEMPF:

Q Mr. Moser, during the course of your cross examination by Mr. Futterman, he asked you a number of questions about your developmental nuclear station at the Genoa location. Do you consider that the company's participation in that developmental project has been a benefit to the company?

A Yes, it has, because we have developed nuclear capability in operation so that we are in a position to consider seriously a nuclear station in our next expansion.

Q Have you made any preliminary cost projections comparing the cost of fossil as opposed to nuclear for your next station?

A We participated in a study with the other power cooperatives in the area. I believe that study was completed about a year ago for a nuclear station to be constructed by, I believe it was, five power cooperatives in the area.

Q Did the study indicate that it would be more attractive from an economic standpoint to build a nuclear or fossil plant?



A From an economic standpoint it looked like the 500 megawatt nuclear station was, from an [1574] economic standpoint based on that study.

Q During your cross examination yesterday you referred to both Western coal and Western lignite. I take it these are two distinct and different things to which you have looked?

A Yes, the lignite that we tried was a North Dakota lignite that was a small quantity tried in the unit.

The Western coal we considered was a subbituminous from either Wyoming or Montana.

Q This morning you indicated that for a comparably-sized fossil unit the cost of your hydro station in terms of capital cost exceeded the cost of a comparably-sized fossil unit, coal unit.

My question is, if you compared the operating costs of the two, which would be the higher?

A The operating costs of a fossil-fired unit are much higher than the hydro costs.

Q If you then took and combined both the operating and the capital cost, what would be the comparison between your hydro station and your fossil station, specifically your older fossil stations which are comparable size?

A Our hydro station has the lowest over-all cost.

\* \* \* \*

[1575] Q You indicated that you had spoken with Mr. Futterman last week. Had you spoken to him on prior occasions also in connection with this case?

[1576] A Yes, I believe a week or two earlier I also had a telephone conversation with Mr. Futterman.

Q Would you describe that as a lengthy or short conversation?

A I would say it was the greater part of an hour.

Q Mr. Futterman posed a question to you based on a number of assumptions. He asked you to assume that a company had some undeveloped deep reserves and that the parent company had not developed them. I have a somewhat different but somewhat similar question to pose to you.

My question is, I want you to assume that a supplier with whom you have been dealing is a strip mine operator and has no experience or expertise in operating a deep mine. If that supplier came to you and indicated that notwithstanding its lack of experience and expertise in deep mining it would like to open some deep coal reserves and sell them to you on a long-term contract, what would your reaction as a coal purchaser be?

A My first reaction would be to want to see his deep mining capability. If he had only mined strip in the past, I would have serious doubts about his capability of mining deep coal.

\* \* \*

[1580]

GORDON R. COREY,

called as a witness on behalf of the defendants, having been first duly sworn, was examined and testified as follows:

THE COURT: Mr. Corey was one of my experts in the electrical equipment cases.

THE WITNESS: Thank you.

THE COURT: It is nice seeing you. You may proceed. I don't know how good he is on coal. You may proceed.

MR. HEDLUND: We will endeavor to find out, your Honor.

### DIRECT EXAMINATION

BY MR. HEDLUND:

Q Would you please state your name and present occupation?

A Gordon R. Corey, Chairman of the Finance Committee of Commonwealth Edison Company.

Q Mr. Corey, how long have you held the position of Chairman of the Finance Committee?

[1581] A Four or five years, I guess. I have been in charge of that at the Edison Company for about, nearly ten years.

Q Have you been a director for the same period of Commonwealth Edison?

A Yes.

Q What, briefly, are your duties and responsibilities as chairman of the finance committee?

A In general charge of the corporate financial, purchasing, legal and rate making activities of the company as well as treasury and accounting.

Q Would contract activities also come within your responsibilities?

A Yes.

Q Among the purchasing activities for which you are responsible, is the purchasing of fuel included therein?

A Yes.

Q Are you a director of any other company?

A Yes, I am a director of the Continental Illinois Bank and its holding company, Conill Corporation, and I have been proposed as a director for Inland Steel Company.

[1582] Q Would you please give me a brief summary of your educational background?

A I have a Bachelor's degree from the University of Wisconsin, an M.B.A. degree from Northwestern University. I am a Certified Public Accountant in Illinois.

Q Could you tell me how long you have been with Commonwealth Edison Company?

A Since 1939 with Commonwealth Edison or Commonwealth Edison subsidiaries.

Q Is Commonwealth Edison an investor-owned public utility?

A Yes.

Q Do you know how it ranks in size among investor-owned public utilities in the United States?

A Well, it is second or third, depending on how you measure it. In terms of kilowatt hour sales, I believe it is No. 3.

Q Tell me approximately how large the revenues of Commonwealth Edison were in 1969?

A Something like \$750 million.

Q What about the assets of the company, just generally again?

A Net \$2.5 billion.

[1583] That is net \$2.5 billion?

A Yes.

MR. CUSACK: The Government objects, your Honor. All this information is in Commonwealth Edison's annual report for 1969, which is in evidence as Defendants' Exhibit 90.

MR. HEDLUND: I am not going to go into detail on this.

THE COURT: All right. Let's not be repetitious.

BY MR. HEDLUND:

Q Could you describe generally the service area of Commonwealth Edison?

A Yes. It is roughly the northern one-third of Illinois, about 13,000 square miles, including the City of Chicago and all of the Chicago metropolitan area which is Illinois.

Q Mr. Corey, I direct your attention to what has been received in evidence as Defendants' Exhibit 144, which is a map of Investor-Owned Electric Utility Services Areas. I wonder if you could describe by color and number the service area of Commonwealth Edison as shown on that map?

A I don't know whether that is mauve or purple, but it is No. 30.

Q Can you tell me, please, sir, what approximately [1584] Edison's net generating capacity was at the beginning of this year?

A Approximately 10 million kilowatts.

[1585] Q Could you tell me generally what the mix of fuel is as used by Commonwealth Edison in its generating plants?

A Yes. It is about 18.5 million tons a year of coal, 3 million tons of gas, 1 million tons of uranium, and an insignificant amount of oil, but we are changing this mix, and for the year 1971 we expect to burn approximately 16 million tons of coal, 5 million tons of gas, and with our nuclear units coming on, with additional nuclear units coming on, and Dresden 2 produced first power late last night, 5.5 million equivalent tons of uranium, and 1.4 million equivalent tons of oil.

When I use tonnage figures for oil and gas and



uranium, I am simply stating the BTU's in terms of equivalent tons of coal. It is for a total of about next year something on the order of 28 million tons of coal and other coal equivalents.

Q Prior to last evening, where was the nuclear fuel burned that you referred to with respect to 1969?

A Well, I was not referring to 1969. I was referring roughly to a normal annual burn of fuel. In 1969 we burned a little less uranium than I mentioned because the unit which you are asking me about was not [1586] in service all year. We burned only 700,000 equivalent tons of nuclear fuel, and that was burned at Dresden Unit 1, at Dresden station, where the Kankakee and Des Plaines Rivers come together to form the Illinois River.

Q How long has Dresden 1 been in operation?

A Since 1960.

Q What other nuclear plants do you have presently in operation or under construction?

A Well, the one that came on, that produced first power late last night, was Dresden Unit 2, an 809,000 kilowatt unit, located at Dresden station.

We have a third unit scheduled to come in service at Dresden station, Dresden Unit 3, another 809,000 kilowatt nuclear unit scheduled for service toward the turn of the year, either late December or early January, next year, scheduled to produce first power.

We have then two units scheduled for service at our Quad-City station, which is located on the Mississippi River north of the Quad Cities of Davenport, Moline, Rock Island and East Moline, and each of these two units will be 809,000 kilowatt units, one scheduled for service early next year and the other scheduled for [1587] service late next year or early the following year.

Then we have two units under construction at our Zion station, which is located near the municipality of Zion, on Lake Michigan, near the Wisconsin-Illinois line.

These are each 1100 megawatts, that is, 1,100,000 kilowatts, nuclear units, one schedule for service in the

Spring of 1972 and the second scheduled for service in the Spring of 1973.

[1588] Finally, we have two nuclear units just announced. They have not been ordered. We have received bids and are currently evaluating bids. These are for approximately 1,100,000 kilowatts for each unit. We have not designated the location, but we expect it to be on the Illinois River some place in central Illinois.

These are scheduled for service in 1976 and 1977.

This brings our total nuclear capacity, after deducting a portion that is owned by Iowa-Illinois Gas & Electric Company, a portion of the Quad-City stations—it brings the total capacity to approximately 7,400,000 kilowatts.

Q And that would include the two new units that you have just announced?

A Yes.

Q Could you tell me roughly what the coal equivalent would be of the nuclear fuel to be burned in the stations which will total 7,400,000 kilowatts?

A Well, we think it is on the order of 20 million tons per year.

Q Do you know how Commonwealth Edison compares with other utilities in the country in terms of nuclear units in operation or under construction?

[1589] A Yes. We have the largest nuclear program announced, to my knowledge. We are just about neck and neck with TVA. TVA had some 5½ million kilowatts announced prior to our announcement of a week or two ago, and we at that time had about 5,400,000, including 200,000 portion to be owned by Iowa-Illinois Gas & Electric Company. I believe our recent announcement makes us larger than TVA, but I know they are considering two or three additional nuclear units. So we are about neck and neck with TVA, and we represent, oh, about some place between 8 and 10 percent of all the nuclear capacity on order, under construction, or in service in the United States.

So the two of us together would have about one-fifth of the capacity, or a little less than that.

THE COURT: Can you hear the witness at the table? There is no indication that you cannot. Proceed.

## BY MR. HEDLUND:

Q Mr. Corey, I believe you gave us an indication of your fuel mix for the year 1971. Could you give me a similar indication for the year 1974?

A Yes. About 15 million tons of coal,  $4\frac{1}{2}$  million tons of gas, 14 million equivalent tons of uranium, and  $1\frac{1}{2}$  equivalent tons of oil, making a total [1590] of 35 million tons of coal or equivalent tons of other fuels.

This, however, is subject almost to constant change, Mr. Hedlund. We announced a low sulphur coal program early in March. We announced an additional modification of that low sulphur coal program or fuel program, I should say, later in March. Recently the mayor introduced a new Chicago ordinance or a proposed new ordinance further limiting sulphur output. This will further modify our future program.

Moreover, neither I nor anyone else knows what the future of the oil import situation may be. I have given you a figure of 1.4 equivalent tons of oil. That represents the oil we expect to get for the generating stations, plus a minor amount for our peaking units.

[1591] As we all know, the oil import picture is in a very uncertain situation. I don't know what the Administration is going to propose with respect to oil import quotas, so that I really am simply giving you a figure that represents today's figures unchanged for oil and for gas, a little less than we have today, simply on the assumption from everything I have read in the papers that probably we won't be getting much gas sometime in the future, but maybe we will.

If it is available, we certainly will be burning more gas and more oil than we are now.

Q Just based on the figures that you gave me, of the 35 million tons of coal equivalent, actually about 40 percent of that total will be coal, is that correct?

A That is our expectation.

Q Is it fair to say, Mr. Corey, that you cannot predict with any real precision what your fuel mix is going to be in the next five years as it relates to coal, oil and gas?

A That's right.

Q I believe you have stated that Dresden 1, your first nuclear plant, went on stream in 1960. When did you order that plant?

A 1955.

[1592] Q At the time you ordered it, what were the reasons that led you to that decision?

A We thought nuclear power was a bright new idea and we wanted to be in the forefront of its development. We have been working with Argonne National Laboratory and the Atomic Energy Commission since 1950, or approximately 1950. We had a study team working on the development of the concept of the boiling water reactor, which we finally ordered in 1955 for our Dresden station.

Q In terms of results at Dresden 1, has it been satisfactory with respect to safety and the reliability of performance?

A Yes. Extremely so.

Q Has it been satisfactory with respect to cost?

A Yes. This requires a little qualification. This was a "Model T" unit in the sense that it was intended to be a full scale unit but not a unit benefiting from improvements in technology which we hoped at the time would reduce full burn-up, increase the kilowatt hour output per pound of uranium burned, which would eventually cut costs.

When we ordered Dresden 1, we had some targets in mind and it met the targets.

Q What about your experience with Dresden 1 [1593] in terms of its flexibility in meeting changes in load-up requirements?

A It has been very satisfactory in that respect. It has been more flexible than a large coal-fired boiler would be.

Q Can you explain that, sir?

A Well, it can move up and down faster and follow load changes better.

Q With respect to the other units which you have under construction or have announced, could you tell me, please, generally, what your reasons were for ordering these nuclear plants?



A Well, at the time the first one was ordered, that is Dresden Unit 2 was ordered on February 5, 1965, and during the ensuing 18 to 24 months, we ordered the remaining units, Dresden 3, Quad Cities 1 and 2, and Zion 1 and 2, and during that period it appeared that whereas we can't be terribly precise about these things, in trying to project a cost of a unit which may not be completed for five or six years, we recognize we were dealing with estimates, but we felt the costs were very close between nuclear and the coal-fired units, and in which we felt that the nuclear units had a bit of an edge, something on the order of a quarter to a half a mil per kilowatt hour in cost advantage.

[1594] Since then, why, so many changes have occurred, changes in the cost of money, changes in the whole picture with respect to the environment and the possibility of having to spend very large amounts of money to remove sulphur from Illinois coal or to bring in coal from Wyoming or Colorado or Montana, that I find it hard to feel that today we can predict these costs even of these existing units that are under construction with the kind of accuracy that I thought we could predict in 1965 and 1966. But it certainly appears that the costs are very close. Moreover, today, as well as in 1965 and 1966, when we were ordering these units, we have a strong incentive to lean towards nuclear, because it is cleaner. It doesn't produce any fumes, any fire ash or sulphur dioxide. That is a nuclear-powered station does not. We had this definitely in mind when we ordered the units, the nuclear units, in 1955 and 1965.

THE COURT: We will take a short recess.

(A short recess was had, after which the following further proceedings were had herein, to-wit:)

[1595] THE COURT: Off the record.

(There was an off-the-record discussion, after which the following further proceeding were had herein, to-wit:)

THE COURT: You may proceed.

MR. HEDLUND: Could I have the witness' last answer? I think I can carry on without it.

**THE COURT:** You were interrogating on Dresden No. 2, Dresden No. 3, and the comparative efficiency of them, according to my notes.

**BY MR. HEDLUND:**

**Q** Mr. Corey, over, say, the last ten years, and without going into specific details, could you tell me whether or not the construction costs of your nuclear stations have increased beyond that for coal-fired stations, not increased as much or stayed about the same

**A** Well, for the—well, that is a large order in one question, Mr. Hedlund, but costs were declining for some time. That is the economics of scale in the power plant field were offsetting the costs of construction cost inflation, and this held true generally through the fifties, and into the sixties, up until the completion of our Joliet and Kincaid units, two units at Joliet and two units at Kincaid, which were placed in service in [1596] 1965, 1966, 1967 and 1968; and these four units represented sort of a low point in the construction costs, and since then construction costs have been rising, and they have risen for both nuclear and coal-fired units, and up until a few weeks ago I would have said to you without any question that they are going up about evenly.

In fact, I testified to that effect in our rate case last fall, that the low point for construction costs of coal-fired units was roughly \$120 a kilowatt, and at about the time that low point was reached we ordered Dresden 1 and 2 and Quad Cities 1 and 2 from General Electric Company on a turn key basis under contracts which will enable us to complete those four units at roughly \$120 a kilowatt, including all overheads.

Since then the costs have escalated so that the Zion units which are not being built on a turn key basis but which are being built by us and by the various contractors contracting with us—

**Q** Excuse me for interrupting, but these are the nuclear units, the Zion?

**A** Yes, nuclear. They are now budgeted on something on the order of \$185 per kilowatt to \$190 a kilowatt, and the Powerton 5 unit, a coal-fired unit which is scheduled



for service at just about the sametime, [1597] but which is being built on a slightly accelerated schedule, is budgeted at about \$215 a kilowatt.

That is a coal-fired unit, and so I did testify and did feel with respect to those units that we had about a 50 or 60 percent cost escalation since 1965 on both coal-fired and nuclear units.

[1598] Now, we have taken bids on nuclear units for 1976 and 1977 service and anticipating further cost increases and, of course, all of these estimates include prospective cost increases through to the service date, and we find we may be talking about costs on the order of \$300 a kilowatt, but our estimates of coal-fired unit costs don't show quite as much of an increase in construction costs.

I do not have the figure in mind as to what we are estimating coal-fired units, but I do know that all costs considered, including the cost of removing sulphur dioxide from the stacks of sulphur from the coal or of bringing in low sulphur Western coal result in the over-all cost per kilowatt being just a trifle higher or neck and neck, as I said a little while ago, with nuclear despite the increased construction costs on the nuclear.

Q Could you tell me why Edison decided to build Powertown No. 5, the coal-fired unit?

A Yes, we needed additional capacity for 1972, and we didn't have any way of building a nuclear unit in time to meet it. The alternative would have been to buy more gas or oil fired peaking capacity, that is gas turbines gas or oil-fired turbines or gas engines, and we had [1599] already bought about a million and a half kilowatts of that sort of capacity and felt we didn't need any more of that peaking capacity, and we wanted a base load unit, and the coal-fired base load unit was the only one that could be built in time.

The reason we were short of capacity was a combination of factors but, primarily, the delays in bringing our nuclear units into service.

Q Has Edison contracted for the coal to supply Powertown?

A Well, yes, certainly.

Q Are you familiar with that contract and with whom it is?

A I am just in a general way familiar with the fact we have contracted for coal to supply Powertown from the Carter Mine to be operated by a subsidiary of Humble Oil Company in Illinois.

Q Do you know what the length of that contract is and the tonnage is to be supplied each year?

A I might be able to refresh my memory. If you want me to take a look and see if my notes will tell me—

Q If I might try to refresh your recollection, might I suggest to you that the contract runs initially [1600] for ten years at about 3 million tons per year and with two five-year renewal options. Would that coincide with your recollection of that contract?

A Yes.

Q Mr. Corey, you have testified to some degree of comparable costs between nuclear and coal, and you testified to the air pollution considerations as they are applied to coal.

I would like to ask your opinion as to the future of nuclear-fired units or nuclear fuel units in the electrical utility industry and, by the future, I ask over the course of the next ten years.

A Well, as far as Commonwealth Edison is concerned, we have sort of put our eggs in the nuclear basket. We believe that nuclear power is the best way to provide base load electric generation, and we intend to move in this direction.

On the other hand, we don't intend to completely forget coal, and we do intend to look at the possibility of a coal-fired alternative every time a decision comes up, but I believe that we will—well, the very fact we have just announced that our 1976 and 1977 units will be nuclear indicates that we believe this is the best way to take care of our massive [1601] electric power generation problems with a minimum of disturbance to the environment.

Q Is Commonwealth Edison participating in the development of the breeder reactor?

A Yes.

[1602] Q Could you describe briefly your participation in that?

A We have engineers assigned to work with both Westinghouse and General Electric Company, and both Westinghouse and General Electric Company have breeder projects going forward, breeder research and development projects, studies going forward, and we are contributing to each of these projects.

We are also privileged as a result of our taking part in each of these projects also to sort of look over the shoulder of General Electric Company and its partners in a project for the construction of a prototype breeder down near Fayetteville, Arkansas, which I believe is almost completed, if it is not completed.

We have our engineers who are assigned to these breeder projects come back and brief the top management once a month or thereabouts in detail as to the outlook for the future.

I expect that within the next year or so the Atomic Energy Commission will select one or two commercial scale breeder projects to be built and tried out, and I would not be at all surprised if we were a member of the group selected.

Q Mr. Corey, there is already in evidence in this [1603] case a number of announcements by Commonwealth Edison in terms of its, if I may paraphrase it, environmental program in the city of Chicago, in which such things have been mentioned as the increased use of natural gas, the retirement of coal-burning facilities, the increased use of low sulphur oil and the use of low sulphur coal.

Taking these programs into consideration as far as your stations in the Chicago area are concerned, could you quantify the amount of high sulphur coal that will be displaced by these various programs in the Chicago area that will be followed by Edison?

MR. CUSACK: Your Honor, I think Mr. Hedlund should indicate what he means by "the Chicago area," or at least ask the witness what he means by it.

BY MR. HEDLUND:

Q Mr. Corey will explain.

In terms of the stations in the Chicago area that would be affected by this program, is what the question is directed at.

A Well, the best way I can quantify this is to say that based upon the programs we have announced, that is the programs for bringing in low sulphur western coal, for bringing in some medium sulphur west Kentucky [1604] coal, for converting Ridgeland station to oil and for burning more gas—based upon those programs, our guesses at the moment are that instead of burning something on the order of 18.5 to 19 million tons of Illinois coal a year, we may by next year be down around 11.5 to 12 million tons.

Another way of putting it is to say that we probably are displacing at least 5 million tons, annual tonnage, with several things—with 2 million more tons gas, 1.25 million more tons of oil, and at least 4.5 million more tons of low sulphur coal from outside Illinois.

[1605] Now, of course, those things add up to more than 5 million tons; but we also have some growth in our electric usage. We will be using a lot more uranium. But so far as the Chicago area is concerned we have got the additional oil, the additional gas, and the low sulphur coal from the west, and over a period of a couple of years it will be at least 5 million tons displacement.

Q And the 5 million tons displaced would be, would it not, high sulphur Illinois coal, that is, coal with a sulphur content of 2.5 percent or greater?

A Yes.

Q If I may ask you to go back to 1967, 1968 and 1969, in that general period, would you tell me approximately what percent of the coal produced in the State of Illinois was consumed by Commonwealth Edison?

A Roughly 25 percent.

Q Is there any other investor-owned utility in the country that you know of that consumes more coal than Commonwealth Edison?

A No. I don't believe I have made an outright comparison with American Electric Power Company, and I am not sure when you said "company" whether you were referring to holding company or operating company. [1606] American Electric Power Company produces more kilowatt hours than we produce, and they are a largely coal-fired generating company. So taking all of their



subsidiaries for their entire system, I would suppose that they use more coal than we do, but I haven't checked it.

Q Mr. Corey, do you recall an interview on which you and Mr. Ward and Mr. Behnke participated in that was published in "Nucleonics Week"?

A Yes. Are you sure it is Behnke and not Ayres?

Q It appears to be Behnke. To refresh your recollection on that and then to ask you some questions about this interview, I want to show you what has been received in evidence as Defendants' Exhibit 98. This document has an excerpt from "Nucleonics Week" for April 4th, April 11th and April 18th.

I direct your attention—

A 1968?

Q 1968, yes. I direct your attention to the third page of this document, which is the second series of this interview, and to the third paragraph on the page that starts as follows—this article purports to quote the substance of the remarks made by yourself and the other two gentlemen, and I wish to ask you after I have read it whether it accurately reflects the [1607] substance of those remarks at the time.

The third paragraph says:

"You cannot buy coal now for such a plant without buying it on virtually a cost plus basis. Our policy is to buy it on five to ten year contracts. Coal is not a great big capital investment business. About all you do when you buy it is pay what it costs a man to get it out of the ground. We believe we can do better by buying it not from year to year, but in five or ten year intervals. That way we can buy from the most efficient miners, the ones who have the best people and are doing the best job at any given time."

Is that an accurate reflection of the remarks made by yourself and the other gentlemen during that interview?

A Yes.

[1608] Q Directing your attention to the last full paragraph on that page, which states as follows—

MR. CUSACK: Your Honor, the Government objects

to Mr. Hedlund's not reading the last sentence of that paragraph into evidence.

THE COURT: You mean in the third paragraph?

MR. CUSACK: Yes, your Honor. He should ask the witness the entire question and not take it out of context. It is obviously taken out of context as he read it and propounded the question to the witness.

THE COURT: Include it.

BY MR. HEDLUND:

Q The paragraph concludes:

"If we were to pick out one company and say, 'We are going to give you a long contract,' obviously he'll retort, 'Well, I will give you the best price I can, but I have to have escalation,' and then you end up with cost plus."

With that added, do the remarks now that I have read accurately reflect the remarks of yourself and the other gentlemen during that interview?

A Yes.

Q Directing your attention to the last full paragraph on that page, it states as follows:

[1609] "But once you get a mine-mouth plant, you absolutely have to contract for coal to supply it. The capital cost on the plant is \$120 million. The capital cost on the mine is about \$10 million. Obviously you can't be put in a position with a \$10 million investor that holds you up because you have your big \$120 million plant sitting beside his mine. So for all practical purposes, you have to buy the mine."

Is that an accurate reflection of the remarks made by yourself and the other gentlemen during this interview?

MR. CUSACK: Your Honor, Again the Government must object. He did not read the complete paragraph. I think the remaining sentences are imperative that they be asked.

THE COURT: Include them.

MR. CUSACK: He refers to one mine. I think the paragraph ought to be finished.



MR. HEDLUND: I think this can be done on cross examination, but I will finish it.

BY MR. HEDLUND:

Q It continues:

"That is the situation with our mine-mouth [1610] plant. We made a long-term cost plus contract for the coal. It runs to 1982; with three 10-year renewal options, that will take us to the year 2012. The need to protect your investment in a mine-mouth plant may give a false impression that longer term coal contracts result from the competition with nuclear fuel."

Is that paragraph an accurate reflection of the remarks made by yourself and the other gentlemen during that interview?

A Yes.

Q Is the contract referred to therein the contract which you previously have testified with respect to the subsidiary of Humble Oil?

A No. That is the contract with Peabody for Mine 10.

[1611] Q In your judgment, Mr. Corey, for the energy system of Commonwealth Edison, will nuclear energy continue to compete with coal?

A I don't understand the question.

Q Let me rephrase it. In your opinion, for the fuel business of Commonwealth Edison, the fuel requirements or energy requirements of Commonwealth Edison, will nuclear energy continue to compete with coal?

A Yes.

Q Mr. Corey, the evidence in this record indicates that Freeman and United Electric Coal have been affiliated companies since at least 1959. To your knowledge has that relationship had any adverse effect on Commonwealth Edison?

A No.

Q Assuming that United Electric neither owns nor produces coal having a sulphur content less than 2.5 percent and assuming that United Electric has sold or oth-

erwise committed all but approximately 4 million tons of its mineable reserves spread among its four existing mines, would the continued common ownership of Freeman and United Electric in your opinion have any adverse effect upon Commonwealth Edison?

[1612] A No.

Q In your opinion, Mr. Corey, what is Commonwealth Edison's major concern with respect to competition among its fuel or energy suppliers?

A I guess it is to have adequate competition and as the energy field gets more diverse, it is hopefully to continue to have effective competition between coal and oil and nuclear. I believe that is one way of putting it.

Another way of putting it is that we have some very, very, very large companies moving into both the coal field and the nuclear field, and I am referring to Humble Oil getting into the coal fields in Illinois. And I am referring to the large oil companies getting into the nuclear business. I am including Conoco—and what is small for an oil company is large for anyone else—Kerr-McGee, Gulf, Gulf General Atomics.

With these things taking place and coupling this with what we saw, how difficult it was for us to get very much effective competition from foreign oil, since it took us almost five months just to get permission to import a little foreign oil for one of our stations, I would say it is important that we continue to have a diverse number of capable financially-responsible [1613] competitors in the energy business so that they are able to compete with the kind of new entrants into our fuel business.

I really would hate very much to see that we had to turn for coal, oil and uranium to just two or three major oil companies. We might then find that we did have a very distinct lack of competition.

MR. HEDLUND: Thank you. That is all I have.

THE COURT: Are you ready to proceed now, or do you desire to recess? Will that expedite your cross examination?

MR. CUSACK: I think it might, your Honor.

THE COURT: We will recess, then, until 2:00 o'clock. Prepare your questions accordingly.

MR. HEDLUND: May we be off the record, your Honor.

THE COURT: Off the record.

(There was an off the record discussion after which the following further proceedings were had herein, to-wit:)

THE COURT: We will recess now until 2:00 o'clock.

(At 12:15 o'clock, a recess was taken until 2:00 o'clock p.m. of the same day.)

. . . .

# AFTERNOON SESSION 2:00 P.M.

. . . .

[1623] GORDON R. COREY,

called as a witness by the defendants herein, having been previously duly sworn, resumed the stand and testified further as follows:

## CROSS EXAMINATION

BY MR. CUSACK:

Q During your direct examination, Mr. Corey, you testified in regard to the commitment of Commonwealth Edison to nuclear plants in the future. You stated that Commonwealth Edison does not intend to completely forget coal and that you will look at coal-fired alternatives every time, is that correct, sir?

A Yes.

Q Is it true, Mr. Corey, that the Commonwealth Edison Company recently has petitioned the Illinois Commerce Commission for permission to set up a fuel subsidiary?

A Yes.

[1624] MR. CUSACK: I ask the reporter to mark for identification as GX-135 a 6-page document entitled "State of Illinois, Illinois Commerce Commission, Commonwealth

Edison Company Application for Authority to Cause to be Formed and to Invest in a Subsidiary Corporation to Conduct Certain Activities Ancillary to its Public Utility Business."

(The document was thereupon marked as GX-135 for identification.)

BY MR. CUSACK:

Q Mr. Corey, I hand you what has been marked as GX-135 and ask you, sir, if you please could identify that document?

A Yes. That is Commonwealth Edison's petition to the Commerce Commission for permission to establish a subsidiary.

Q This is the fuel subsidiary, sir?

A Yes.

[1625] Q And this petition is dated March 26th, is that not correct, sir?

A Yes.

Q Excuse me. What is the date of the petition?

A March 26, 1970.

Q Now, the petition states in part, Mr. Corey, at page 1, numbered paragraph 3:

"Fossil fuel procurement has become increasingly difficult. The growth of nuclear power has had the effect of making coal mine operators reluctant to open new coal mines in and near Edison's territory."

Is that correct, sir?

A Yes.

Q Mr. Corey, is it true that a subsidiary of Commonwealth Edison Company is at the present time acquiring coal reserves in Menard County, Illinois, near the town of Petersburg?

A I am not acquainted with the location, but we are acquiring coal reserves.

Q Are these reserves being acquired, sir, by a corporation named PIAMCO, Incorporated?

A Yes.

Q Is this company headquartered in St. Louis?

[1626] A Yes.

Q Would it refresh your recollection, sir, if the land subsidiary of PIAMCO was called the Menard County Land Company?

A I don't know.

Q This corporation is in the charge of Mr. Snyder, isn't that correct, sir?

A That's right.

Q Formally of the Peabody Coal Company?

A Yes.

Q Mr. Robert Snyder?

A Yes.

Q Can you tell us, Mr. Corey, approximately how many tons of coal Commonwealth Edison Company plans to acquire through PIAMCO?

A I don't know.

Q Can you give us an approximate number?

MR. HEDLUND: At this point, your Honor, I am going to object. I believe further inquiry along this line is outside the scope of my direct examination.

THE COURT: The objection is sustained.

[1627] BY MR. CUSACK:

Q Mr. Corey, is it contemplated that when air pollution control devices are developed, Commonwealth Edison Company will strip mine the coal reserves being acquired through PIAMCO?

MR. HEDLUND: Same objection, your Honor.

THE COURT: How is this within the scope of the direct examination? All we are dealing with here is the sole question as to whether or not they are acquiring reserves, as indicated on direct examination, because there was a scarcity.

Now, the amount and all of this new matter, I don't see how that is relevant.

MR. CUSACK: What I am attempting to determine, your Honor, is whether or not Commonwealth Edison Company has plans for the future development of these coal reserves it is acquiring in Illinois and what it plans to do with these reserves going to the general problem or the question of the nuclear versus coal commitment of Commonwealth Edison Company for its electrical generating stations.



THE COURT: Do you have any response?

MR. HEDLUND: Again, I do not believe—well, your Honor, the petition, in a sense, covers it on its face in [1628] terms of the statement that it does not plan to mine this coal until air pollution devices are available.

Now, I believe this witness has testified on direct examination that they are not going to forget coal. The petition, I think, on that score speaks for itself.

Obviously, if they are going to acquire coal as well as other forms of fuel and other aspects of this petition, I think it is reasonable to assume that indeed Commonwealth Edison is not going to forget coal.

[1629] But I would argue that going into the minutia of this and the details of the coal, and so forth, is outside the scope of the direct examination.

THE COURT: The objection is sustained. Proceed.

### CROSS EXAMINATION

BY MR. CUSACK:

Q Mr. Corey, approximately how many tons of coal were purchased and consumed by Commonwealth Edison Company in 1950?

A I don't remember.

Q Do you have any idea, sir?

A I am trying to think. It would be, at best, a wild guess. 1950?

Q Yes, sir.

A Well, it is somewhere between five and ten million tons.

Q Would it be under 10 million tons?

A I am not certain.

Q In 1960, sir, how many tons, approximately, of coal were consumed by Commonwealth Edison Company?

A Well, I would again—well, it is between twelve and fifteen million.

. . . . .

[1632] Q Excuse me, the Kincaid Station, and is that the only minemouth generating station of Commonwealth Edison Company at the present time?

A Yes. May I now correct, for the record—I have finally located the precise figure on coal for 1969. It was 18,800,000 tons.

Q Thank you, sir. Sir, since 1950 the Commonwealth Edison Company has built the Ridgeland generating station, is that correct, sir?

A Yes.

Q This was originally built as a coal-fired station and has now been switched to oil, is that correct?

A It is being switched to oil right now, hopefully by July 1 of this year.

Q And the net generating capacity of the Ridgeland Station is about 337,000 kilowatts, is that correct, sir?

A That sounds right to me.

Q In 1951 Commonwealth Edison built the Waukegan generating station, is that correct, sir?

A No, it built a unit at Waukegan. Waukegan has been there 40 years.

Q Is Waukegan a coal-fired station, sir?

A Yes.

Q What is the approximate generating capacity of [1633] Waukegan?

A I can look it up. I would guess about 1,700,000 kilowatts. That is again my estimate.

If you want a precise figure, I will check it for you.

Q Commonwealth Edison Company owns the Dixon generating station, is that correct, sir?

A Yes.

Q Is that at Dixon, Illinois?

A Yes.

Q Is this a coal-fired station?

A All of these stations you are referring to are coal-fired, but both Dixon and Waukegan also burn gas.

[1634] Q How much gas is burned, approximately, in Waukegan, as a percentage of the total energy of that station?

A I would guess about a third.

Q And what would the figure be for Dixon, sir?

A I just don't remember. It is probably on that order, a quarter to a third.

Q Is the gas burned at Dixon and at Waukegan interruptible gas?

A Yes.

Q And available then only in the summer?

A Generally, yes.

Q In 1955 is it correct, sir, that Commonwealth Edison Company constructed the Will County Generating Station around that time?

A In 1955, yes.

Q And that is a coal-fired station, sir?

A Yes.

Q What is the approximate kilowatt capacity of that station? Would it refresh your recollection if I said 328,000.

A That was what was built in 1955, but we also built a unit in 1957 that was 280,000 kilowatts, roughly, and then we built another unit in 1963 that was about [1635] 360,000 kilowatts, I believe, so it is about a million kilowatts.

Q And that is a coal-fired station, sir?

A Yes.

Q In 1955, Commonwealth Edison built the State Line generating station, is that correct, sir?

A It built one unit in 1955. The station itself was started in 1929. Mr. Insull built the first two units there, I believe.

Q Is this a coal-fired station, sir?

A Well, again, it burns a lot of gas but it burns both gas and coal.

Q Is it interruptible gas which is burned at this station?

A Yes.

Q Approximately what percentage of the total energy consumed at the State Line station is coal?

A I really don't have these figures in my mind. I would say roughly a quarter to a third, but when I say that I am just picking the figure out of the air, Mr. Cusack.

Q Would it be any more than a third?

A I doubt it.

. . . .

[1638] Q You are putting in a foundation and a chimney, is that correct, for another unit?

A I don't know about the foundation. We are leaving space for another unit, and we are trying to get permission to build the stack high enough and large enough so that it will take two units.

Q Would you anticipate, sir, that if another unit is built at Powerton, that is Powerton No. 6, that this would be a coal-fired station?

A Yes. Not necessarily, though, Mr. Cusack, but this would be a strong possibility.

Q Would it also be a strong possibility, Mr. Corey, that Commonwealth Edison Company would construct in the next ten or fifteen years additional minemouth coal-fired generating stations?

A Well, it is certainly a possibility. You see, I just—at the moment I have just been going through an evaluation of coal versus nuclear for the two units we talked about this morning, and we came out on the nuclear side, and with environmental considerations what they are, I have to say that the chances were very—were preponderantly against the construction of a coal-fired station.

Q Mr. Corey, Commonwealth Edison Company is making [1639] great efforts, is it not, to control emission from coal-fired stations, is that correct, sir?

A Yes.

Q And the 1969 annual report of Commonwealth Edison Company states that:

“Commonwealth Edison Company has already spent \$53 million on facilities to prevent contaminants from getting into the air.”

Is that correct, sir?

A Yes.

Q And Commonwealth Edison Company also has plans to spend substantial additional sums, does it not, on air pollution control devices?

A Yes, we have plans to spend about 160 to 170 million dollars on air and water pollution control specifically without respect to nuclear in the next few years.

This is with respect to sulphur dioxide to remove it.

Q Directing your attention, sir, to the coal-fired units of Commonwealth Edison Company, approximately how much money has already been spent to control pollution at the Commonwealth Edison Company coal-fired units?

MR. HEDLUND: Your Honor, I am going to object to [1640] the phrasing of that question because I think it is misleading. There are a number of ways of controlling sulphur dioxide emission from a coal-fired station. One way is to convert it to oil. Another way is to burn less coal or to burn low sulphur coal, and I submit that the question phrased is incapable of answer unless you parse it out in terms of what you are doing and then what you are doing as to cost.

THE COURT: Rephrase your question, Mr. Cusack.

[1641] BY MR. CUSACK:

Q Mr. Corey, at the present coal-fired generating plants of Commonwealth Edison approximately how much money already has been spent on pollution control devices?

A Are you speaking of air pollution?

Q Yes.

A I believe it is the \$53 million figure you just referred to in the annual report.

Q Can you give us an approximate sum of money that Commonwealth Edison Company plans to spend on its present coal-fired generating stations?

A Well, I mentioned—

MR. HEDLUND: I object again. I don't think that is a question. Spend for what?

BY MR. CUSACK:

Q For pollution control devices.

A I just mentioned \$170 million for air and water pollution in total, and I really don't remember how that is split between water and air. I do know that some of it applies to cooling water devices at nuclear plants, so I can't say that is directly responsive to your question.

If you want something right off the top of [1642] my head, and taking your question as a question with respect to air pollution, and including sulphur removal and the like, I would say on the order of \$50 million.

This again is not a considered figure. It is a rough



approximation of what I think is in that \$170 million figure.

Q It is a fact, is it not, Mr. Corey, that Commonwealth Edison Company has been a leader in electrostatic precipitators on coal-fired generating stations?

A Yes.

Q And it is a fact that Commonwealth Edison Company led in the development of these devices as far back as 1929?

A Yes.

Q And is it not also a fact, Mr. Corey, that Commonwealth Edison Company has been heavily engaged in research in regard to sulphur emission devices, control devices, on coal-fired stations?

A Yes.

Q And you have done work, have you not, with the Humble Oil Company in this regard?

A Yes.

[1643] Q Now Mr. Corey, approximately how much money already has been spent by Commonwealth Edison Company in the development of sulphur dioxide emission control devices on coal-fired stations?

A I don't know.

Q Could you give us an approximate figure?

A I just am not able to approximate it.

Q Do you anticipate that within the next five years, Commonwealth Edison Company, either by developing the equipment itself or by developing it in concert with others, will be able to achieve or will be able to develop an acceptable SO<sub>2</sub> emission control device on its coal-fired stations.

MR. HEDLUND: Your Honor, I think there are two questions in there. My confusion is with the "achieve" or "develop".

THE COURT: I think they are nearly synonymous. He may answer. It is clear to the witness.

BY THE WITNESS:

A Yes.

BY MR. CUSACK:

Q Mr. Corey, when these devices are developed, do you anticipate that Commonwealth Edison Company then will be able to continue to utilize high sulphur [1644] Midwestern coal?

A Yes, but I don't quite like your using the word "continue". We intend to reduce the sulphur content of the coal we burn in accordance with the ordinances and cut well below the requirements in the ordinances that are now in effect and are pending, and if and when we get good sulphur removal processes, then I certainly would expect that we would and should return to using Illinois coal. But not until that time happens. I am quibbling over the word "continue".

Q I understand. And based on your belief in the future of Illinois coal, Commonwealth Edison Company is in the process of developing coal reserves in Illinois which will be used when Commonwealth Edison Company develops these devices, is that correct?

A Acquiring coal, you say?

Q Acquiring coal.

A Not developing.

Q Is that correct, sir?

A That's right.

Q During your direct examination, Mr. Corey, Mr. Hedlund asked you in regard to some statements made in Defendants' Exhibit 93, the interview in the "Nucleonics Week" magazine of April 4, 1968, between you, Mr. Ward [1645] and Br. Behnke.

Mr. Hedlund asked you in regard to paragraph 3 on page 5 of this exhibit, which I hand you, and the last sentence in that paragraph reads as follows:

"If we were to pick out one company and say 'We are going to give you a long contract', obviously he will retort, 'Well, I will give you the best price I can, but I have to have escalation,' and then you end up with cost plus."

Mr. Corey, isn't it true that most of the coal contracts to supply Commonwealth Edison Company do have escalation clauses?

A Yes.

[1646] Q Could you tell us very briefly what this escalation consists of?

A It has been a long while since I worked on those clauses, but they generally are rather informal type clauses that provide for consideration of escalation in labor costs, in material costs, changes in—well, there was no provision for changes in productivity so I will strike that. Also consideration of changes in the coal market and changes in taxes and miner's royalties—that is United Mine Workers royalty provisions.

However, the clauses are not automatic clauses. They are clauses which provide for periodic negotiation based on a renegotiation of the escalation provisions based upon consideration of these factors. It worked quite well.

Q Mr. Corey, isn't it true that most of the long-term coal contracts of Commonwealth Edison Company are constantly undergoing renegotiation?

A I didn't realize it, but there is a fair amount of, from time to time, changes or extensions in the contracts. Our principal problem the last couple of years, however, has been to get performance. Everyone in the United States is short of coal and we just aren't getting the coal that is provided for in the contracts.

[1647] That, incidentally, does not apply to United Electric. They are one of the few contracts that we have had that we have had almost complete performance under.

Q It is a very fine company, isn't it?

MR. HEDLUND: Your Honor, I would like to hear that answer.

THE COURT: Are you moving to strike it?

MR. HEDLUND: No, I don't think so. I would like to hear it back.

THE COURT: Read the answer, please.

(Record read by the reporter.)

THE COURT: You may proceed.

BY MR. CUSACK:

Q United Electric is a very fine company, isn't it?

A I guess so.

Q Isn't it true, 'Mr. Corey, that for a number of years Commonwealth Edison was almost solely dependent upon coal as a source of energy?

A Yes.

Q And isn't it true, Mr. Corey, that in the future coal will be a very important source of energy to the Commonwealth Edison Company? Given, that is, [1648] the development of SO<sub>2</sub> pollution control devices?

A Yes.

Q In your direct examination, Mr. Hedlund asked you for the years 1967, 1968 and 1969 about the approximate percentage of Illinois coal production consumed by Commonwealth Edison. The evidence in this case shows that in 1967 total Illinois coal production was 64,814,000 tons. The evidence in this case also shows that in 1967 the total coal production in Illinois, Indiana and west Kentucky was 129,500,000 tons.

Approximately what percentage of this production was consumed by Commonwealth Edison Company in 1967?

MR. HEDLUND: I will object. I believe that question implies that there was consumption by Commonwealth Edison Company in those years of coal from Indiana and west Kentucky. If it does not imply that, he is just asking Mr. Corey to make a mathematical computation, and I object on that basis.

THE COURT: It is not clear.

MR. CUSACK: I will connect it up, your Honor.

THE COURT: I say your question is not clear. It is not clear how you are applying it to them, to all of these different states. Do you have the figures? If you do, give Mr. Corey the figures, and ask if they bought coal from those states.

[1649] BY MR. CUSACK:

Q Mr. Corey, I direct your attention to GX Weir Deposition Exhibit 1, which is a map entitled "Illinois-Indiana-West Kentucky Shipping Coal Mines, January 1969."

Mr. Corey, is it a fact that the Commonwealth Edison Company generating stations purchased coal from throughout the area set out on this map?



**MR. HEDLUND:** I will object unless Mr. Cusack takes that in terms of specific generating stations. I think it is misleading to lump the purchases for all generating stations in such a manner.

**THE COURT:** The objection is overruled. He may answer. He may answer if he knows.

**THE WITNESS:** What is the question?

(Question read by the reporter.)

**BY THE WITNESS:**

**A** In what period?

**BY MR. CUSACK:**

**Q** At the present time.

**A** Well, not exactly. I don't think we are taking any Indiana coal. I could be mistaken with respect to an insignificant amount, but I don't think we are taking any Indiana coal at the moment.

[1650] Until we contracted for some west Kentucky coal recently because we thought we could get some with a lower sulphur content down there and have been fairly disappointed about it, we haven't been taking any West Kentucky coal recently. We have during the early 1960's taken some from the River Queen Mine on the Green River in West Kentucky, but generally we have not been taking West Kentucky coal except occasionally to make up shortages.

**Q** Do you anticipate that Commonwealth Edison Company will in the next few months be increasing its consumption of west Kentucky coal?

**A** Yes. We are in a fair spot, however, on that. We as an interim measure tried to some buy some West Kentucky coal, and it is a medium sulphur content, and it is 2.5 percent sulphur, and this is not low sulphur, but it is lower than Illinois, and we got it for that purpose. But it will not meet the proposed provisions of the new Chicago ordinance. Whether we take that coal or not I am not sure what we are going to do.

**Q** Mr. Corey, in the last ten years, Commonwealth Edison Company has purchased coal from mines located in Indiana, is that correct, sir?



A I am quite sure sometime in the last ten years, [1651] yes, but not very much. You see, we anticipated buying a good deal of Indiana coal from the Lynnville Mine of Peabody. That was about 10 years ago. We started a unit train operation, but it never worked out, because we were stopped from crossing the EJ&E tracks and had to change the whole plan.

Q It is true that Commonwealth Edison at the present time does purchase coal throughout the Illinois coal field, is that correct, in the state of Illinois.

A Well, fairly widely. That is a pretty broad statement, Mr. Cusack. We buy from a lot of different Illinois mines.

Q Mr. Corey, do you consider that the Commonwealth Edison Company is in a position to overreach the midwest coal producers in negotiating with these coal producers?

A I don't understand the question.

Q Do you consider that the Commonwealth Edison Company is in a position to bargain unfairly with the mid-west coal producers in negotiating for the purchase of coal from these producers?

A I thought that we were the fat boy, but we bargain as well as we can and try to hold our own. I don't believe that we bargain with coal producers, though. We bargain with individual suppliers.

[1652] Q Mr. Corey, do you believe that the Commonwealth Edison Company's purchasing power in the acquisition of energy resources creates an unfair advantage over the Midwest coal producers?

A No.

Q It is true, is it not, Mr. Corey, that the Tennessee Valley Authority purchases more coal than the Commonwealth Edison Company?

A Yes.

Q Do you believe that Commonwealth Edison Company in its purchases of coal is in a better, a worse or about the same position as TVA?

A You mean as to its bargaining position?

Q Yes, sir.

A I think about the same.

Q Would your answer be the same with regard to Union Electric?

A I assume so. I am not quite clear what you mean. I assume what you really are saying is can we buy as effectively or can we bargain as effectively as TVA or Union Electric, and I think the answer is yes.

Q Do you believe that Commonwealth Edison can bargain more effectively than TVA?

A In one respect, and in one respect only, and [1635] that is that TVA is restricted in its bargaining by some rules which are generally applicable to Government buyers and not to private buyers. These rules pertain to such things as public opening of bids, and things like this, which in my opinion are not so much designed to protect the rights of the buyer as to protect the rights of the seller.

There are many rules that apply by custom and by law to Government buyers which are designed to ensure that all of the constituents of the Government have the right to deal with it on equal terms. There are no such rules binding a private buyer. So we don't have to publish all of the bids, and therefore I believe we are able to bargain a little more effectively.

This has been a matter of public record and long discussion before the Federal Power Commission in reference to proposed purchasing regulations. I believe the TVA is to some extent harmed by the regulations it has to operate under. I am very close to a number of the TVA people, and I believe they recognize this.

Q Mr. Corey, would Commonwealth Edison Company be in a better position to bargain with coal producers than the Union Electric Company?

A I suppose about the same.

[1654] Q Would your answer be the same with regard to Northern States Power?

A Yes.

Q Wisconsin Electric Power Company?

A Yes.

Q Mr. Corey, directing your attention to the nuclear commitment of the Commonwealth Edison Company and to GX-135, the petition of the Commonwealth Edison Company before the Illinois Commerce Commission, do you

anticipate, sir, that there will be a shortage of uranium in the late 1970's and early 1980's?

A I don't know. I don't think so. Certainly there will not be if the present embargo on foreign uranium is lifted.

[1655] Q Mr. Corey, the City of Chicago's proposed bill, proposed apparently by Mayor Daley, pertaining to the 1 percent sulphur limit on coal burned, refers only to the stations within the city limits of Chicago, is that right, sir?

A That's correct, but there are some more regulations pending with respect to stations outside.

Q With regard to the Zion stations, Zion 1 and Zion 2, is it true that the Metropolitan Sanitary District of Greater Chicago has a suit pending in which it seeks to prevent the operation of the Zion nuclear plant on the ground that its thermal and radiation emissions will pollute Lake Michigan?

A Yes, sir.

Q Is that case still pending?

A Yes.

Q In the event Commonwealth Edison Company builds cooling towers at Zion 1 and Zion 2, how much approximately do you think this will increase the cost of the stations?

A Oh, probably \$50 million. This really is not a question of cost. To keep the record clear, Mr. Cusack, the problem is a problem of weighing one environmental problem against another. Cooling towers are very large [1656] and very bulky, and so far no cooling towers of this size have been built this far north. Cooling towers give off a large amount of steam and vapor, especially in the winter months, and it could occasionally cause icing and other problems.

We have had a clean bill of health from the Federal Water Pollution Control Administration, and we believe that the interest of the community best will be served by pursuing our plans at Zion. However, from the standpoint of the over-all economics, cost of the cooling towers is what I mentioned, about \$50 million.

[1657] Q Mr. Corey, on your direct examination you were asked whether or not the merger of Commonwealth Edison Company—excuse me, the merger of United Electric Company and Freeman Coal Mining Corporation was harmful to your company.

Is it a fact, sir, that United Electric Company coal is consumed at your river stations outside of Chicago?

A Yes, it is consumed at river stations, both outside of Chicago and inside Chicago.

Q And isn't it true that Freeman also supplies coal for the river stations of Commonwealth Edison Company?

A Yes.

Q Directing your attention, sir, to the period prior to 1959, before Frank Nugent and the other Material Service representatives went on the board of United Electric, did you consider United Electric and Freeman to be competitors?

A Yes.

Q Sir, in regard to the coal-fired stations of the Commonwealth Edison Company, can nuclear fuel be burned at these stations?

A No.

[1658] Q Is it a fair statement to say, Mr. Corey, that for the coal-fired stations of Commonwealth Edison the principal competitors for the energy fuel of these stations are coal producers?

A Yes.

Q Sir, is it true that the major coal suppliers at present of Commonwealth Edison Company are the Peabody Coal Company, Freeman Coal Mining Company, United Electric and Southwestern Illinois?

MR. HEDLUND: I am sorry, your Honor; may I have that question read back, please?

THE COURT: Read the question.

(Question read by the reporter.)

BY THE WITNESS:

A No, I don't think you can say that because of our large low sulphur program, and the coal we have been buying lately, contracting for that is, from the west is com-

ing from various new suppliers, whereas in a sense we have been phasing out.

As you know, the United Electric contract expires this year and has not been renewed, our contract with United Electric. We have bought coal from, as I said, from west Kentucky. We have bought coal from Wyoming. We have bought coal from Montana, and these [1659] are from new suppliers.

What we are doing right now is looking at a number of other new suppliers, so that I think in the sense of the present competitive situation, that these are not the principal competitors. Certainly, they are the principal current suppliers of coal, except that you didn't name Consolidated, which is also a supplier through its Truax-Traer Division.

Q Sir, when Commonwealth Edison Company develops an effective SO<sub>2</sub> emission coal device on its coal-fired stations do you anticipate the companies which I have named and including the Consolidation coal will be the principal suppliers of coal for Commonwealth Edison?

A I don't know. It is a distinct possibility, but I find it hard to predict what will happen or what may happen if we are successful in developing good sulphur removal processes.

Q Is it true, Mr. Corey, that the western coal producers are not priced competitive with the Illinois coal producers at the present time?

A That is right. You mean western coal is more expensive delivered to Chicago, certainly, than Illinois coal.

Q How much more expensive, just generally?

[1660] A Well, it is at least 50 percent more and on a temporary basis as much as double, but we expect that when we get our unit train operations going from the west and the logistics worked out, we will have the price down to about 50 percent higher, more than Illinois coal.

Q Sir, in regard to the nuclear commitment of Commonwealth Edison Company, in your opinion is Edison is a better position to incorporate nuclear power in its system than a small electric utility?

A Yes, sir.

Q Sir, you stated that the first four of the six commercial sized units ordered by Commonwealth Edison,



Dresden 2 and 3, Quad Cities 1 and 2, were purchased from General Electric Company on a turn key basis, is that correct?

A Yes.

Q That means on a fixed price contract?

A Yes.

Q You also testified, did you not, sir, that the Dresden 2 plant went into operation last night, I believe?

A Well, it first produced first power last night. It is not, commercially speaking, in commercial service. A number of tests have to be done.

[1661] Q Is it true to say, sir, Dresden 2 is the first non-pilot nuclear power plant of Commonwealth Edison Company?

A I don't know—that requires a definition of pilot, and I don't consider Dresden 1 to be a pilot plant. I said it was a Model T, but it is full scale and not a prototype. That is what we normally think of when you say pilot.

It is just the first of its kind.

[1662] Q To put it this way, is Dresden 2 the first commercial size nuclear plant of the Commonwealth Edison Company?

A No, that is not right either, because when we ordered Dresden 1 in 1955, a 200,000 kilowatt unit was a commercial-sized unit.

I will put it this way. It is the first unit that we have ordered where the costs were competitive with coal.

Q Is Dresden 1, sir, producing power as cheaply as comparable-sized coal-fired plants?

A The answer is yes, after writing off \$15 million of research and development costs which we were allowed by the Internal Revenue Service to write off. These were costs contributed by ourselves and some six or seven other members of the nuclear power group.

We obtained a ruling in 1955 for permission to write off these estimated excess costs and with these costs written off the over-all cost of generation at Dresden 1 is competitive with the cost of generation from similar-sized coal-fired plants of the same vintage, or, I should say,

which were in operation at the time Dresden 1 was ordered in 1955.

This was our benchmark, and it met the [1663] benchmark.

Q You have had some delay in Dresden 2, have you not?

A Yes.

Q Approximately how long has the delay been?

A Approximately a year. We expected it to be in commercial operation originally by the spring of 1969, and I guess, hopefully, it will be in commercial operation in the spring of 1970.

Q This delay has resulted in added expenses to General Electric, is that correct? It was a turnkey contract, wasn't it?

A It certainly was, but it has resulted in added expenses to Commonwealth Edison, too.

Q Approximately how much?

A I don't know, but if we measure it in terms of increased fuel costs it is pretty sizeable.

It is certainly measured in the millions of dollars.

Q Have there been some delays at Quad-Cities, too?

A Yes, all the nuclear units, all the first four units are delayed approximately a year. Excuse me; that is overstating it a bit, but between six months and a year due to a very well-known failure of Babcock & Wilcox [1664] to meet its schedules in fabricating reactor vessels in its Mt. Vernon Plant and this has been taken care of with respect to the Zion units by our purchase of an extra reactor vessel.

Q Sir, did Commonwealth Edison Company invite bids for coal-fired equipment in conjunction with its recent invitation for nuclear bids?

A No, because we were already building Powertown 5, and we were able to extrapolate very accurately, I think, what the cost of Powertown 6 would be.

The turbine prices are pretty well a matter of public knowledge, and the other components we are pretty well aware of what the prices are, and when we, as we have to do in a coal-fired station, do all the construction work ourselves, we have had a great deal of experience and

we are able to estimate these costs and have done so in great detail.

Q Sir, in your direct examination you testified that the cost per kilowatt hour at Powertown 5 was 215 a kilowatt hour. Would the increased cost be based on the acceleration, construction acceleration schedule there and also—would it be based on that?

A You misinterpreted my direct examination. I testified that Powertown 5's budget was \$215 a kilowatt.

[1665] Q Yes, sir.

A Not per kilowatt hour.

Q Per kilowatt; excuse me.

A This is construction costs. Now, let's take it from there. What is the question?

Q Would that cost of \$215 be accounted for partially because of the accelerated construction schedule at that plant?

A Very little of it, perhaps maybe \$10, something like that, but it is not an important part of the cost.

Q Would this \$215 cost be particularly ascribed to the work being done for possible Powerton 6 at that station?

[1666] A Yes, I think again we are talking something on the order of \$10 for that figure. I don't have it precisely in mind.

It is in the record in our rate proceeding before the Commerce Commission, but I think it is about \$10.

Q On direct examination, sir, Mr. Hedlund asked you regarding the coal contract for the Powerton station, and you testified this was with the Carter Coal Company, a subsidiary of Humble Oil & Refining Company.

It is a fact, is it not, that Humble is developing an underground mine in Macoupin County, Illinois, to supply coal for that generating station, is that correct, sir?

A I think so. I don't remember the county.

Q Do you have confidence that Carter Coal Company will make deliveries on that contract?

A Yes.

Q From that mine?

A Well, I have confidence that they will make deliveries. That is all that is of importance to me.

MR. CUSACK: May I confer with my colleagues, your Honor?

THE COURT: You may.

[1667] (There was a short interruption, after which the following further proceedings were had herein, to-wit:)

MR. CUSACK: Just two more questions, your Honor, if I may, please.

THE COURT: You may.

BY MR. CUSACK:

Q In reference to the coal reserve being acquired by Commonwealth Edison through PLAMCO, these reserves are located in Illinois, are they not?

A Yes.

Q Are they located in central Illinois?

A Some place in central Illinois. I am not precisely sure.

Q Would it refresh your recollection if I stated they were located near the town of Petersburg?

A You did a while ago, and I said I wasn't sure.

Q Is it a fact, sir, these are strip coal reserves?

MR. HEDLUND: I object to that, your Honor, on the same basis as before, that is, going into the minutia of these coal reserves. We have already established they are reserves and my objection is renewed.

THE COURT: Objection overruled. He may answer.

[1668] BY THE WITNESS:

A Well, we have no specific plans for mining coal. We do hope it will be strip.

BY MR. CUSACK:

Q Mr. Corey, who in your company would have the information as to the amount of reserves you are attempting to acquire in Illinois, coal reserves?

A Mr. Beeman.

Q Would Mr. Snyder also have this information?

A Yes.

MR. CUSACK: We have no further questions. Thank you very much, your Honor.

**THE COURT:** Any redirect?

**MR. HEDLUND:** Yes, your Honor, I will have redirect. I am mindful of the witness' convenience. If he would be agreeable to returning tomorrow, I would like to take him on redirect at that time.

**THE WITNESS:** I have made arrangements to—Mr. Ayres won't leave until 4:00 o'clock.

**MR. HEDLUND:** Then would you be willing to stay, your Honor?

**THE COURT:** Yes.

**MR. HEDLUND:** Could I have, then, about five minutes, your Honor?

. . . .

# [1670]      REDIRECT EXAMINATION

**BY MR. HEDLUND:**

**Q** Mr. Corey, I believe you testified on cross examination with respect to regulations on air pollution in the City of Chicago, and you mentioned that those were not the only regulations that were looming on the horizon, or something like that.

What other regulations were you referring to?

**A** The State of Illinois has some proposed regulations applicable to the Chicago metropolitan area.

**Q** Is that in connection with the Federal Clean Air Act of 1967 in the so-called Greater Chicago Interstate Quality Control Region?

**A** I think so.

**Q** Do you know what areas or what counties are included within at least the Illinois portion of that?

**A** I believe it is the area that is generally defined as the Chicago metropolitan area, which is, if my recollection is correct, Lake County, Cook County, DuPage County, Will County and possibly parts of McHenry County, though I am not sure. I am not sure whether it includes Kane County. I think it does.

[1671] **THE COURT:** You do not follow the Chicago Tribune's definition which carries it into Milwaukee, Iowa—

**THE WITNESS:** We stop short of the Twin Cities anyway.



BY MR. HEDLUND:

Q With respect to the question Mr. Cusack asked you as to who the principal competitors are at your coal-fired stations, directing your attention to the Ridgeland Station and its operation in the next year, who are the principal competitors for that station?

A The oil companies. The oil companies with international oil.

Q Isn't it true too, Mr. Corey, that that oil is going to cost you from a BTU delivered standpoint more than your coal cost in prior years?

A Yes.

Q Nevertheless, that is going to oil, is it not?

A Yes.

[1672] Q So it is fair to say that just taking the Ridgeland station, the delivered cost of energy per BTU is not the sole or indeed even the most significant factor in the competition between coal and, in this case, oil?

A That's right.

Q Is it not also correct, Mr. Corey, that as a result—let me back away from that for a moment. In the past you have burned a considerable amount of natural gas at Ridgeland, have you?

A Yes.

Q As a result of switching Ridgeland from coal to oil, you will be able to use this gas at other stations, will you not?

A Yes.

Q Will you use that gas at other coal-fired stations?

A Yes.

Q So that to that extent the gas will displace coal at these other coal-fired stations, will it not?

A Yes.

. . . .

[1678] RECROSS EXAMINATION

BY MR. CUSACK:

Q Mr. Corey, Commonwealth Edison Company does purchase some fuel on the basis of the lowest price per delivered BTU, does it not?

A Well, in the last six months, I would say our coal purchasing—the most important consideration in our coal purchasing has been the sulphur content. Once we get enough low sulphur coal to meet our needs, low sulphur coal that we can burn to meet our needs, that is, we certainly hope we will find our selves in a position where we can start picking and choosing and picking that burnable low sulphur coal which is cheapest. But at the moment, we are in the rather desperate situation of buying just about all the burnable low sulphur coal we can get.

Until we can assure the public and the Government that we are going to meet all of the requirements and meet all of our promises, we would just be buying whatever we could lay our hands on almost.

I hate to put it that way, because we obviously do consider price and have to, and that is what you are getting at, I am sure. I am not trying to quibble with you, but—

[1679] Q Well, in reference to GX Nugent Deposition 38, directing your attention to the mines in the Southern Illinois freight rate district, Commonwealth Edison Company does at the present time purchase coal produced in this district, is that correct, sir?

A I am not sure. Would you outline that district to me?

Q Yes. (Indicating)

A I don't know of any for sure. I should qualify an answer I gave to Mr. Hedlund, that I know we are buying some coal through O'Keefe and it is coming from various mines, and I don't know where the mines are. I think maybe some of them are in West Kentucky and some are in that district. I don't know. I am sure there are others here who do know. I don't.

Q In reference to the Kincaid station of the Commonwealth Edison Company, which is located contiguous to the Mine No. 10 of Peabody, are you at the present time burning high sulphur coal at that station?

A Yes.

Q And you do have stack precipitators on that station, do you not, which eliminate approximately 98 percent of the emission from those stacks?

A Yes. We have precipitators on virtually [1680] every, high efficiency precipitators on virtually every stack in our system.

Q In reference to the Powertown station, at Pekin, Illinois, you are burning high sulphur coal at that station, are you not?

A Yes.

Q And the new unit that is being built there at the Powerton 5 will consume high sulphur coal, is that correct, sir?

A That is correct. Assuming that we are able to develop an effective sulphur removal process by the time that unit goes in service or shortly thereafter.

Q And you do expect to develop that, do you not, sir?

A They are working very hard on it, yes.

. . . . .

[1685] MR. CUSACK: Your Honor, at this time the Government moves the admission into evidence of GX-135, the petition before the Illinois Commerce Commission of the Commonwealth Edison Company.

THE COURT: Any objection?

MR. HEDLUND: No objection.

THE COURT: It may be admitted.

(The said document was received into evidence as Government Exhibit 135.)

MR. HEDLUND: I have just two quick questions.

THE COURT: All right.

### REDIRECT EXAMINATION

BY MR. HEDLUND:

Q Just so the record is clear, electrostatic precipitators which you referred to in your cross examination by Mr. Cusack do nothing with respect to sulphur emissions or sulphur dioxide, do they?

A That's correct.

Q They are confined solely to particulates or what is known as fly ash?

A Yes, sir.

Q You mentioned your demonstration or pilot installation of a sulphur dioxide control device. That will not be completed for operation until the end of next [1686] year, is that correct?

A I think that is right. We will complete it as fast as we can. But we do not expect it to be more than a demonstration facility. We are still working. This is research and development in its present stage.

Q But as I understand it your target date for installation at this present time is about 18 months from now.

A That's right.

Q Is it not also a fact that right now you have no equipment installed on any of your generating stations to reduce or control the emission of sulphur dioxide?

A That's right. We have been experimenting with the addition of additives to the furnace so that the low sulphur coal we burn will not result in improper operation of the precipitators and will not result in increased dust emissions from the precipitators by reason of having not enough sulphur dioxide to cause proper ionization of the stack gases. So in that sense we are taking the steps necessary to make it possible to burn low sulphur coal without increased particulate emissions which might result otherwise.

Q By low sulphur coal, this would be with a sulphur content less than 2.5 percent?

A Less than 1 percent.

. . . .

[1693]

JOHN D. AMES,

called as a witness by the defendants herein, having been first duly sworn, was examined and testified as follows:

### DIRECT EXAMINATION

BY MR. HEDLUND:

Q Would you please, for the record, state your name and occupation.

A John D. Ames.

THE COURT: Spell your last name.

THE WITNESS: A-m-e-s.

BY THE WITNESS:

A I am a partner in the investment banking firm of Bacon, Whipple & Company, 135 South LaSalle Street.

BY MR. HEDLUND:

Q Mr. Ames, if you will, try to keep your voice up. That is not a microphone; that is simply a device for a tape recorder.

A I will; I am sorry.

Q Mr. Ames, could you please give me a brief description of your educational and business background.

A I went to preparatory school in Asheville, North Carolina, and to Princeton University where I [1694] graduated in 1928.

From 1929 to 1952 I was publisher of the Chicago Journal of Commerce. At that time we sold the Chicago Journal of Commerce to the Wall Street Journal.

I then became a general partner of Bacon, Whipple in, I think, 1952 or 1953 and have been there ever since.

Q Would you give us the names, sir, of some of the boards of which you have been a director in the last 15 or 20 years.

A Well, of course, there is United Electric Coal. Up to last year I was a director of the Wallace Murray Corporation. I am presently a director of the Pyle National Company here in Chicago, of the Homeowners Insurance Company here in Chicago, and the Clark Equipment Company of Buchanan, Michigan.

Q When did you first become a director of United Electric?

A In 1948, I believe, 1948 or 1949; I am not sure which.

Q And for how long did you serve as a director for United Electric?

A Until 1966.

Q Approximately or almost—

[1695] A 17 years.

Q When you became a director for the first time, who was president of United Electric?



A Mr. Frank Kolbe.

[1696] Q And he continued as a director, did he, I mean as president until 1959, is that correct?

A That is correct, yes, sir.

Q And who was president after 1959?

A John Morris.

Q While you were a director, I mean.

A Yes.

Q Do you recall back in 1955 whether or not the company, that is United Electric, was involved in merger discussions with any other company?

A I believe there was some talk at that time about a merger with Truax-Traer.

Q Do you know why at that time United Electric had entered into such negotiations or such discussions?

A I believe it was generally thought by the management and the board that a merger of some kind would be helpful to United Electric to gain additional reserves.

Q Do you recall in 1959 when representatives of Material Service and Freeman came on the board of United Electric, do you?

A I remember.

Q Can you tell me at that time and following whether there was any discussion by you with others [1697] in the company or any general discussion at which you were present where the subject of the possible merger between Freeman and United Electric took place?

A I don't remember any discussion except a very short conversation I had with Mr. Reuben Thorson.

Q We have heard of that discussion before. Can you tell me what you recall of that discussion?

A Mr. Thorson and I were walking back from a meeting, and he said that he thought it would be in the best interests of United Electric Coal if they merged with Freeman.

THE COURT: About when was this conversation?

THE WITNESS: In 1960. That is a little bit of a guess. I can't tell whether it was the end of 1959, 1960 or early 1961.

## BY MR. HEDLUND:

Q Mr. Ames, do you recall whether or not prior to 1959, that is, prior to the Material Service, Freeman people coming on the board, whether there were any discussions at board meetings or any discussions that you might have had with management that indicated any interest by United Electric in becoming a deep miner?

A No, I had no such conversation. I believe United Electric had an experience with deep mining in [1698] western Kentucky that didn't turn out very well, and I don't think the management at the time to which you refer was really interested in deep mining.

Q What about after 1959; do you recall any discussions at the meetings of the board of United Electric or in your discussion with management, whether the subject of deep mining by United Electric ever came up?

A It did come up, and I think the reason it was given consideration was on account of the—how shall I say—talent for deep mining that the men of Freeman Coal had that were also members of the United Electric board.

Q Would you give me your best recollection, Mr. Ames, as to what the company was doing or what efforts United Electric were trying to make with respect to acquiring additional reserves after Mr. Nugent came on the board of United Electric and became chairman of its executive committee?

A Well, I think that one of the things that was uppermost in everybody's mind at that time, including Mr. Nugent's, was the fact that United Electric should somehow or other obtain some more reserves; and the matter was discussed, and I don't know how to say it, [1699] but I think regularly or at regular intervals.

Q Did you have enough contact with the company to form an opinion as to whether the reserve activity of United Electric was greater or lesser or about the same after Mr. Nugent came on the board than before?

A I think I would have to say it was greater.

[1700] Q Mr. Ames, the Government is contending in this case or has contended that following the election to

the board of United Electric of the representatives of Material Service and Freeman, these directors hampered and held back United Electric in acquiring additional coal reserves.

Mr. Ames, I ask you in your opinion is there any substance to such a charge?

A There is none.

Q From 1959, that is again upon the election of the Material Service-Freeman representatives, were you aware of any attempt or desire on the part of Mr. Nugent and the other Material Service-Freeman-General Dynamics directors to unnecessarily conserve United Electric cash or to hold back United Electric in any way from making needed capital improvements or for improving the financial basis, the equipment basis of the company?

A If I recall correctly, there was a great deal of money spent for capital improvements—I can think of two wheels, and I can't name much more—than there was in the previous five or six years, and I think I would have to answer that question that there was no indication that I could see that these directors were in any way trying to prevent capital expenditures or [1701] to hold back the growth of the United Electric Coal Company.

Q Mr. Ames, you served as a director up until 1966, that is up until the tender offer for the balance of the shares of stock, did you not?

A Yes.

Q Between 1959 and going up until that time, did you ever see any evidence or have any suspicion that the Freeman-Material Service or General Dynamics directors were trying to run United Electric for the benefit, not of all the stockholders, but for the benefit of Freeman-Material Service or General Dynamics?

A I didn't see any, and I think I would have been pretty upset if I had seen some.

Q Are you absolutely sure that you saw none?

A Yes, I am absolutely sure.

Q Going back to 1959, Mr. Ames, do you know whether or not Mr. Kolbe was in favor or opposed to the re-

structuring of the board that took place, that took place in that year?

A Can I give an opinion?

Q If you will also indicate the basis for that, yes.

MR. CUSACK: The Government objects, your Honor. [1702] Opinion evidence is not proper in response to that question.

THE WITNESS: I was wondering.

THE COURT: The way the question is framed, the objection is sustained.

BY MR. HEDLUND:

Q Mr. Ames, do you know of your personal knowledge whether Mr. Kolbe was opposed or in favor of the restructuring of the board in 1959?

A I would have to answer no.

Q Mr. Ames, would you give me your opinion, please, as to the competency and ability as a coal executive of Mr. Frank Nugent?

A Well, I thought he was excellent.

MR. HEDLUND: I have nothing further, your Honor.

THE COURT: You may cross examine.

# CROSS EXAMINATION

BY MR. CUSACK:

Q Mr. Ames, is it a fact that from 1959 to 1966 when United Electric was merged into General Dynamics that United Electric made substantial progress?

In order for you to answer this question, I hand you what is in evidence as GX Nugent Deposition Exhibit 31 at pages 12 and 13.

. . . .

[1707] Q To refresh your recollection, sir, do you recall United Electric acquiring coal reserves at the Round Prairie Field?

A Yes, I do.

Q Isn't it a fact, sir, that while you were a director of United Electric, United Electric did acquire a substantial amount of coal reserves at the Round Prairie Field?

A I don't know. I don't know the number or how much.

Q Sir, based on your testimony on direct examination in regard to whether or not the General Dynamics directors on the board of United Electric were using United Electric for its own purposes, I ask you whether or not it was the intention of the board of directors of United Electric while you served to the board to turn over to Freeman Coal the corporate opportunity of mining the Round Prairie underground coal reserves?

A No.

Q Isn't it a fact, sir, that you were on the board of United Electric there were plans for United Electric to develop in the future its underground coal [1708] reserves?

A With the help of Freeman.

Q And Freeman would be compensated, would it not?

A This was my understanding.

Q And United Electric also could, could it not, have developed its underground reserves with the help of another underground company, could it not?

A I don't see that that would have been as good as doing it with Freeman.

Q Would it have been as good had United Electric acquired underground personnel to acquire the reserves without Freeman?

A That wasn't necessary. Freeman was there.

Q If Freeman had not been there, Mr. Ames, do you believe it would have been likely that United Electric on its own would have developed its underground coal reserves?

A I do not.

Q On what do you base your opinion, sir?

A Well, Mr. Kolbe, and even Johnny Morris—they had no leaning toward underground coal. They didn't know very much about it. As I said before, they had one bad experience, and I saw no indication or would have



no idea that without Freeman they would have gone independently by themselves.

[1709] Q Is it a fact, sir, that Mr. Kolbe felt that the future of strip mining was bright and that it would not be necessary for United Electric to go into underground coal?

A I think, if there were plenty of reserves, that future for strip mining would have been good, but there weren't plenty of reserves.

Q On what do you base this opinion, sir?

A Well, the numbers I think speak for themselves.

Q Did you ever investigate yourself the availability of strip coal reserves in Illinois?

A The only information I got was information given to me at directors meetings by Mr. Kolbe and subsequently by Johnny Morris and Frank Nugent.

Q Did Mr. Kolbe ever indicate to you that in his opinion United Electric would not be able to buy sufficient strip coal reserves to remain in business?

A He never went that far, but there weren't any strip coal reserves left. They were all gone.

Q Who stated that to you?

A Well, somebody on the board. Some of the management.

Q Did Mr. Nugent state that to you?

[1710] A I can't remember. I know every effort was made to get them at all times, first by Mr. Kolbe and then more intensely by Mr. Nugent.

Q Do you recall a meeting of the board of directors of United Electric where the board stated that the management could only buy strip coal reserves at the Industry Field at farm prices?

A Yes, I do.

Q Wasn't this proposed by Mr. Nugent?

A No, it was Mr. Kolbe, I think. He would be willing to do that, he said, if he didn't have to pay more than farm prices. The record will so show, I think. I could be wrong on it, but that is my recollection.

Q You voted, did you not, sir, for the acquisition by United Electric of strip coal reserves at the Industry Field, is that correct?

A Well, the record is there. I can't remember.

Q Mr. Ames, prior to your testifying today, did you read testimony in this trial of Mr. Thorson?

A Yes.

Q Who gave you that testimony?

A Defense counsel.

Q Mr. Hedlund?

A Yes.

. . . .

[1715] Q Mr. Frank Kolbe serves on the board of directors of the Clark Equipment Company at the present time with you, is that right?

A That's correct.

Q And Mr. Kolbe is on the executive committee of Clark?

A That's correct.

Q And you served together in that board?

A Yes.

Q In regard to the Truax-Traer merger, isn't it a fact that the primary motivation for the merger of Truax with United Electric in 1955 was that their mines were very close together, both in Fulton-Peoria and in Perry County near the Fidelity Mine, and that a merger of these two companies would create great operating savings?

A That was discussed.

Q Wasn't this the prime reason for that merger discussion?

A Well, I wasn't in on any of it. All we heard were results or progress or lack of it. I can't tell you the reasoning behind it, except that it would, as I stated once before, increase the total reserves of the combined companies.

. . . .

[1717]

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

No. 67 C 1632

UNITED STATES OF AMERICA, PLAINTIFF

vs.

GENERAL DYNAMICS CORPORATION; THE UNITED ELECTRIC COAL COMPANIES; and FREEMAN COAL MINING CORPORATION, DEFENDANTS

Before HON. EDWIN A. ROBSON, Judge,

Wednesday, April 15, 1970,

10:50 o'clock a.m.

**PRESENT:**

MR. JOHN THOMAS CUSACK,  
MR. ROBERT L. EISEN,  
MR. RONALD L. FUTTERMAN,  
MR. HUGO SIMS, and  
MR. RICHARD J. BRAUN,

appeared for Plaintiff;

MR. REUBEN L. HEDLUND,  
MR. DONALD G. KEMPF, JR., and  
MR. RICHARD H. IRVING, III,

appeared for Defendants.

**ALSO PRESENT:**

MR. JAMES M. FOLSOM  
DR. PETER STEINER,

. . . .

[1723]

DARIC N. MILLER,

called as a witness by the Government in rebuttal, having been first duly sworn, was examined and testified as follows:

## DIRECT EXAMINATION

BY MR. FUTTERMAN:

Q Would you please state your name and spell your first name, please.

A Daric Miller; D-a-r-i-c.

Q What is your business address, Mr. Miller?

A 818 Kansas Avenue in Topeka, Kansas.

Q By whom are you employed?

A Kansas Power & Light Company.

Q What is your occupation?

A I am manager of electric production.

. . .

[1726] Q How many tons of coal did Kansas Power & Light [1727] Company consume in 1969?

A Something like about 140,000 tons.

Q How would you characterize this coal in terms of its sulphur content?

A This is southeast Kansas bituminous which is, generally speaking, in the three and a quarter, three and a half percent sulphur area.

Q What other forms of energy besides electricity does Kansas Power & Light Company distribute?

A We are in the transmission as well as the distribution business of natural gas.

Q Does Kansas Power & Light Company have any base load generating stations under construction at the present time?

A Yes. We are in the process of building a unit of about 430,000 kilowatt capacity as an addition to the Lawrence power plant.

Q When will this plant be on line?

A The spring of 1971.

Q When this plant is completed, what percentage of your total generating capacity will it represent?

A It is about 30 percent.

[1729] Q Why did Kansas Power & Light Company not [1730] choose oil as the sole energy source for the new Lawrence unit?

A We haven't been able to find that much oil in the state of Kansas that we can buy at a respectable price level.

Q When you decided to burn coal as one of the primary fuel sources at the new Lawrence station, were you concerned at all about stack emissions?

A Yes.

Q Which emissions were you concerned about?

A Well, we were initially, obviously, concerned about particulate emission.

In reading the trade journals and keeping our ears open and our eyes open, we were of the opinion that if something could be had for control of SO<sub>2</sub>, it might be time to spend money and have the money well spent.

Q Was there any state or local legislation governing air quality or limiting stack emissions at the time the decision to burn coal was finalized?

A No, I don't think so.

Q Was any contemplated by the State of Kansas?

A Yes. The State was involved in setting up an air quality conservation law that looked like it was going to set forth standards to become effective some- [1731] time about the first of 1971.

Q What types of air pollution control systems, if any, were originally scheduled to be part of this facility?

A We initially laid the plant out with electrostatic collectors and a respectably tall concrete stack.

[1732] Q How much of a capital investment would a system incorporating electrostatic precipitators and a tail stack have required had it been installed?

A The system to include the ponds and the dust and the ash-handling facility in our economic study at about that time was in the area of about \$3 million.

Q What kind of an air pollution control system, if any, will this facility contain when it is completed?

A It will have a Combustion Engineering air pollution



control system on it that has the ability to collect particulate as well as SO<sub>2</sub>.

Q Why did you choose this system?

A In our examination at that time, it was really the only system that we could find that could do or was proposed that could do anything other than just remove particulate.

Q What is the system designed to accomplish?

A Its guaranteed accomplishments are 99 percent removal of the particulate and 83 percent of the SO<sub>2</sub> in the flue gas in burning our southeast Kansas coal, which is something in the area of 12 percent ash and 3½ to 3¼ percent sulphur.

Q Did Kansas Power & Light Company install the Combustion Engineering air pollution control system on any [1733] of its other coal-burning units at Lawrence?

A Yes. We have an installation on an existing 125,000 kilowatt unit that we added it to.

Q How much of a capital investment did the stack emission system incorporating the Combustion Engineering air pollution control system require for the new unit at Lawrence?

A In trying to separate out the dollars between the two systems, at the time we made this purchase, we looked in the area of \$3 million.

Q Were you able to use any of your existing equipment at the Lawrence Station in the Combustion Engineering air pollution control system?

A Is this question in terms of the new unit?

Q Yes, sir.

A Of course, we already had the ground at the site of which we utilized some of the ground area. The major items of equipment that we did use, we permanently borrowed two coal pulverizers and their appurtenance equipment, which includes the bunkers so that we could grind the limestone in those two pulverizers and inject it into the steam generator in the new unit. Had we not had them, we would have had to bought along with this combustion system some limestone grinding capacity.

[1734] Q How much would that have cost you if you had to purchase that equipment?

A I would suspect something in the area of perhaps \$400,000.

MR. HEDLUND: I am sorry, your Honor.

THE WITNESS: \$400,000.

THE COURT: That is not an amplifier.

THE WITNESS: Excuse me.

THE COURT: It is for a tape recorder.

BY THE WITNESS:

A I would suspect in the area of \$400,000.

BY MR. FUTTERMAN:

Q Could you very generally describe the mechanics of the Combustion Engineering air pollution control system?

A We are pulverizing limestone and blowing that limestone into the furnace to calcine the limestone to a reactive material, an alkaline reactive material, so that we can collect and precipitate and collect the  $\text{SO}_2$  in the scrubber and dispose of it in the pond.

[1735] BY MR. FUTTERMAN:

Q Prior to the Kansas Power & Light Company's commitment to purchase stack emission control devices, did you conduct any tests of the Combustion Engineering system?

A We did run some tests on the 125,000 kilowatt unit there at the station.

Q Where and how did you conduct tests?

A Our main process of conducting the tests was to determine if we could put limestone in the furnace with the fuel and end up with the exit pass from the boiler, with the limestone in a reactive state that when the scrubbers were added, it was there available to be used for  $\text{SO}_2$  removal.

Q What did Kansas Power & Light Company conclude after conducting these tests?

A Well, after we finished those tests and we evaluated our economics and looked at what we had available for stack emission control, we decided to purchase the Combustion Engineering air pollution control system for that 430,000 unit.

We also decided to purchase a like system for the existing 125,000 kilowatt unit, the particular purpose being that the Lawrence station now was going [1736] to become a major coal-burning plant on our system, to provide stack emission control on the 125,000 kilowatt unit, and also to learn how to operate, and what the bugs were, and what the problems were in this Combustion Engineering system, so that by the time we came to the 1971 start-up date on the 430,000 unit, we could assure ourselves that we had a system that, in our opinion, would be reliable to operate at that time.

Q Is the 125,000 megawatt unit containing the Combustion Engineering system in service at the present time?

A Yes.

Q When did it go into service with the Combustion Engineering system?

A The unit initially went into service in the Spring of 1968. We put the air pollution control system in service on the unit in December of 1968.

Q Have you encountered any insurmountable problems with the 125,000 megawatt unit, to the present time?

A We encountered problems from the day we started it up. Up to this juncture, I don't think that we have encountered any insurmountable problems. [1737] We have labored rather seriously with the system in an effort to find out how it works, and have modified the system somewhat. We have changed some of the materials that were initially installed in the system to where we can install the scrubber system on the new unit with those modifications as originally planned.

Q Do you believe that you have had sufficient operating experience with your Combustion Engineering air pollution control system at Lawrence to expect reliable operation with the same system on the 430,000 megawatt plant?

A From what our experience has been, yes, we do expect to have reliable operation out of the 430 unit when it goes on the line next spring.

Q At the time Kansas Power & Light Company decided to purchase the Combustion Engineering air pollu-

tion control system, to your knowledge was there any other sulphur dioxide emission control system available for sale?

A We are not aware of any that were available at that time.

[1738] BY MR. FUTTERMAN:

Q To your knowledge at the present time are other manufacturing companies engaged in the technology of stack gas emission control?

A From what we read in the trade journals and listen, yes, I'm sure there are.

Q Are you as familiar, less familiar, or more familiar with other stack gas emission control systems as you are with your Combustion Engineering air pollution control system?

A We feel like we have a rather serious familiarity with the Combustion Engineering air pollution control system, but we are not familiar with the others.

MR. HEDLUND: I'm sorry, I did not hear that answer.

THE COURT: Read the answer.

A (Read by the Reporter.)

BY MR. FUTTERMAN:

Q Has your Combustion Engineering air pollution control system performed in accordance with its guarantees?

BY THE WITNESS:

A We have made the guarantee performance from the unit, yes.

Q Have members of the trade expressed any interest in your Combustion Engineering air pollution control system?

[1739] A We have had a lot of visitors and a lot of people talk to us on the phone concerning the subject, yes.

Q What will be the sulphur content of the coal burned at the Lawrence, new Lawrence unit?

A It is contemplated, in that it is coming out of the same mine as to what we are burning coal now, that we

are in the three and a quarter, three and a half percent sulphur area.

Q Subsequent to the operation of the 430 megawatt plant at Lawrence in April 1971, when will your next base load expansion occur?

A Our present plans as far as base load addition look like about spring of 1978.

Q How large a plant are you contemplating at the present time?

A We haven't tied down the size, but we would expect it will be at least as large as the 430,000.

Q What fuel or fuels do you expect will be consumed in this plant?

A Well, again in looking at it with our pencil it doesn't look like nuclear is economic at that size range, so we expect that we will have a choice between gas and coal, as far as primary fuel.

[1740] Q Do you anticipate that coal will be burned at the plants to come on line in 1978?

A I would expect that coal will be the major fuel that is burned in that plant in 1978.

Q Are you installing a stack gas emission control system on that plant?

A I think, in looking at the regulations we are obliged to operate under, we will, if we burn coal, be obliged to control stack emissions.

It would appear that we may even have a choice as to what kind of a system we do it with.

Q Do you believe that the Combustion Engineering air pollution control system which is being installed on the 430 megawatt plant will do the job that is designed to do?

A From our operating experiences on the 125,000 kilowatt unit, I don't really think there is any question but what it can perform.

. . . .

#### CROSS EXAMINATION

[1769] BY MR. HEDLUND:

. . . .

Q And about how high?

A It extends upward something, it looks like about 100 or 120 feet.



Q Something similar to, say, a 10 or 12-storey building?

A Yes, a rather small one.

Q Would you give me, sir, your best opinion—let me approach it this way.

If we take the figure of \$3.5 million that you have testified to as to the end cost of your two units plus the \$400,000 that you were able to save, or the reproduction costs of the pulverizers, you get to \$3,900,000, what would be the approximate kilowatt cost then, the capital kilowatt cost for these two units?

A Well, we are looking at a net output between the two of them of something like 550,000 kilowatts. If we add the \$400,000 worth of equipment that we did not have to spend money for, we end up with a number then that looks like about \$7 a kilowatt.

Q \$7 per kilowatt?

A Yes.

Q In your opinion, does that represent, if one were to construct such a device today, does that \$7 per kilowatt represent what you believe it would cost today [1770] on a kilowatt basis?

A May I interpret that question to mean if we were repurchasing this today for our system, what could we buy it for?

Q That is correct, and without regard to savings that you would be able to make because of prior acquired equipment or land for that.

A Yes, and knowing full well that we have some modifications that we would then have to be buying today that we did not have at the time of our purchase.

Q Right.

A I don't know the answer to that question. I will give you an opinion of what I think the magnitude of that number might be.

Q Yes, sir.

A I would guess something in the area of \$8, \$8.50, today.

Q That is \$8 to \$8.50?

A Today.

Q Today, per kilowatt?

A Yes.

Q Would you give me, sir, your best estimate of what your owning and operating costs per ton of coal will be with respect to the continued operation of these [1771] two units?

A In our normal manner of looking at that question, we do not include owning cost as an operating cost. We are expecting, and from what we have demonstrated, we would look at an operating cost of somewhere between a cent and a half and two cents per million BTU. Our coal is essentially 25 million BTU. So, you can equate that on a ton of coal basis for me.

Q In your judgment, would an estimate of Combustion Engineering's system's owning and operating costs at approximately 90 cents a ton, applied to coal similar to which you are purchasing, be a reasonable estimate? I am including there both owning and operating costs.

A We are talking about 90 cents a ton, we are talking about essentially our coal?

Q That is right.

A As far as its BTU content?

Q That is correct.

A We are talking about limestone and we are talking about power and we are talking now about fixed charges of owning?

Q No. We are talking about both fixed and operating costs, limestone maintenance—

[1772] A Including the limestone at this juncture?

Q Yes.

A I think that the 90 cents a ton is in a reasonable area, correct, yes.

[1778] Q You are aware, are you not, that Combustion Engineering has a similar limestone wet scrubbing system [1779] installed at the Meramec plant of Union Electric?

A Yes, sir.

Q Have you visited that operation?

A I visited it before it went in service.

Q Pardon me?

A I visited it before it went in service.

Q Have you visited it subsequently?

A No, sir.

Q Have you had any conversations subsequently with anyone from either Combustion Engineering or Union Electric with regard to that system?

A Oh, about third-hand basis.

Q You do know, do you not, that they have had substantial operating problems with respect to that?

A I have heard they have.

Q You are aware, are you not, Mr. Miller, that a spokesman for Combustion Engineering, in reference to the unit at Union Electric, stated in the summer, I believe it was, of 1969, that "At the present time the process is not a commercially acceptable unit"?

A We are talking about the one at St. Louis?

Q That's correct.

A I haven't tried to read all the material on the St. Louis one.

[1780] Are you aware that such a statement was made by Combustion Engineering?

A I have, again, second- and third-hand information of that statement, too.

Q Mr. Miller, is it fair to conclude on the basis of the decisions made by Kansas Power & Light with respect to the installation of these devices, and with respect to the operating experience that you have had, that sulphur removal devices are now commercially available, commercially operable for all, or even most of the utility stations in this country?

A Let me attempt to answer your question in this manner:

I think a sulphur removal device, as we understand ours, which is really the only one we can talk about, is a system you have to engineer and design to a specific environment of plant.

Beyond that, I don't know that I know the answer to your question, because I don't know the environment that you are talking about putting them in in a specific enough nature to answer that question.

. . . . .

[1782] Q At the present time, Mr. Miller, to your knowledge—let me back up, if I may, your Honor. I should be able to do this very shortly.

[1783] In terms of your prediction on operating costs of, I believe you stated, a cent and a half to two cents per million BTU, it is the fact, is it not, that you really don't have a good handle on what your maintenance costs are going to be with respect to the 430—

A As far as long-term maintenance costs, no, we do not have.

Q Other than the Combustion system that has been installed at Union Electric, and has been installed at Kansas Power & Light, and is to be installed on your 430 megawatt station, are you aware of any other installations of such a system in the country, either presently existing, or under construction?

A No, sir.

Q Is it a fact, is it not—before I ask that question, Mr. Miller, could you give me your opinion of what the megawatt size is of an average base load unit being installed today?

I know that is difficult to answer unless you take it on a system by system basis. But, say, for other than such systems as Commonwealth Edison or American Electric—

A Well, I think it is really only fair to say [1784] that I don't know anything about Commonwealth Edison or American Power.

Obviously, the size of installation of a base load unit that I know something about is our own, which is 430,000 kilowatts, which would be those in the reasonably immediate area around us, which are up in size now, as far as installation in service, to 500,000 kilowatts.

\* \* \* \*

[1827] FRANK NUGENT,

called as a witness by the defendants herein, having been first duly sworn, was examined and testified as follows:

MR. HEDLUND: As your Honor is aware, Mr. Nugent's deposition was taken for some three or four days.

THE COURT: Yes.

MR. HEDLUND: I do not intend without reason to recross ground covered at that time, nor do I intend to

go into a number of subjects with Mr. Nugent about which he is definitely familiar but which there is already a considerable body of evidence and which I feel would be repetitive.

THE COURT: All right.

### DIRECT EXAMINATION

BY MR. HEDLUND:

Q For the record, please, sir, would you state your name and present occupation.

BY THE WITNESS:

A Frank Nugent; Group Vice President of General [1828] Dynamics, President of Freeman Coal Mining and President of United Electric Coal Company.

Q Would you please, sir, for me please briefly describe your background and experience in the coal industry.

A I have been in the coal mining business for about 50 years starting—

MR. CUSACK: Your Honor, may I object here.

I think it would save time. I asked Mr. Nugent quite extensively in regard to his qualifications. It is in the deposition. I really think it is repetitive. It is in evidence. I think I went into it with a fine-tooth comb. I really don't think it is necessary we all know Mr. Nugent's qualifications.

THE COURT: You agree to his qualifications and background as stated in the deposition?

MR. CUSACK: I certainly do, your Honor.

MR. HEDLUND: I did not mean to go into this with a fine-tooth comb but just to hit the high spots in terms of what he was—

THE COURT: Well, it is in the deposition. Let's proceed from there.

BY MR. HEDLUND:

Q Mr. Nugent, when did you first become affiliated [1829] with Freeman Coal Mining Corporation?



A November—Well, let's see. In November 1921 with the Burton Coal Company, and the Burton Coal Company acquired the Freeman Coal Mining Corporation in August of 1922.

[1830] Q I gather that since 1922 you have been with Freeman Coal Mining Corporation as well as others?

A Yes.

MR. HEDLUND: I do not believe this is in the deposition, your Honor.

BY MR. HEDLUND:

Q Would you please describe your function for General Dynamics in your capacity as group vice president other than your responsibilities directly with respect to United Electric and Freeman Coal Mining Corporation.

A The president of Material Service and the president of Marblehead Lime report to me. I am associated with the Asbestos Corporation in Canada as a member of the board.

Q You became, did you not, president of United Electric upon the retirement of Mr. John Morris?

A Yes, sir.

Q How long did you serve in that capacity?

A Mr. Morris retired in November of 1966. I took over as president to January 1st, 1968.

Mr. Camicia was president from January of 1968 to April 1st of 1969.

I again took over on April 1st, 1969.

Q You have continued to serve in that capacity since? [1831] A Yes, sir.

Q Mr. Nugent, I hand you what has been received in evidence as Defendant's Exhibit 48, and hand it to you, which is a letter, a printed form letter, dated December 15, 1954, on the letterhead of the Chicago Wilmington & Franklin Coal Company to the stockholders of CW&F Coal Company, and signed by George B. Harrington as president.

Without meaning to characterize the document, but in the interest of time, I note that this is in effect an offer for the tender of shares of the CW&F Coal Company. I note that in the third paragraph, referring to an offer that has been made, it states:

"Understandably the other party to these discussions has not yet wished to be disclosed."

I ask you, if you know, who the other party was to these discussions and, in effect, who is going to acquire the stock for which this offer was being made?

A The Empire Building Corporation. I think that was the proper corporate name.

Q Who owned Empire Building Corporation?

A The Crown family.

Q Did they also at the time own Material Service?

A Yes, sir.

[1832] Q then, in effect, did they also at the time own Freeman?

A Yes, sir.

Q I note that this document is dated December 15, 1954.

Do you know whether or not the stock sought by this offer was, in fact, acquired by Empire Building Corporation or by the Crowns?

A Yes, sir, it was.

Q Do you know when?

A The closing was on December 31st, 1954.

Q At that time, had they acquired all or substantially all of the stock of CW&F?

A Substantially all.

Q In 1954, CW&F owned and operated coal mines, did it?

A Yes, sir.

Q In the state of Illinois?

A Yes, sir.

Q Following the closing, that is, at the end of the year 1954, and on indefinitely into the future through and including 1960 or 1961, were the mines of CW&F, in fact, operated by Freeman and was the coal produced at those mines, in fact, sold by Freeman?

A The mines were operated by Freeman and the coal was sold by Freeman.

[1833] Q There is some evidence in this case—again, without attempting to characterize it—that it was not until 1958 or 1959, or whatever the record does show, that certain of the properties of CW&F were not until

that time actually transferred to Freeman or to any of its affiliates.

Could you explain to me, if you know, why there was that delay?

A There were some tax considerations. But in addition to that, the Orient No. 2 Mine, which had been a large hand-loading mine and at one time one of the largest hand-loading mines in the country, had a bad un-employment experience. Freeman sought not to acquire that unsatisfactory experience. That was the reason for the delay.

Q Is it true in point of fact that from January 1, 1955 forward, other than the qualifications that you have just mentioned, that CW&F and Freeman were, in fact, one coal mining company?

A Yes, sir.

Q Would you tell me briefly, Mr. Nugent, the extent to which you participated in the transactions referred to in Defendants' Exhibit 48?

A I believe I called it to Henry Crown's attention [1834] originally and initiated the negotiations, and I carried forward the negotiations with George Harrington.

Q Is it fair to say that it was your idea that, in effect, Freeman acquire CW&F?

A Yes.

MR. CUSACK: Your Honor, that is in the deposition very clearly. There is no dispute on that matter. Mr. Nugent said it before.

MR. HEDLUND: The Court is aware, your Honor—if I may reply?

THE COURT: Yes.

MR. HEDLUND: The Court is aware that there is a dispute between the parties of substantial sort as to when CW&F was acquired by Freeman.

THE COURT: He may answer. That is not going into it in any great detail.

MR. HEDLUND: I believe he answered, but could we have it read back?

THE COURT: Read the answer.

A (Read by the Reporter.)

BY MR. HEDLUND:

Q Mr. Nugent, when, if you recall, did the Crown interests or Material Services first acquire stock in the United Electric Coal Companies?

[1835] A 1954.

Q Could you briefly describe the circumstances surrounding the initial purchase?

A Well, initially, I think we acquired a small block of stock, really, with no serious intent, perhaps. But as I got to studying the reserve situation, it occurred to me that this would be a worth-while acquisition because of the shortage of reserves and because we did have reserves that would back up that property. I could see that the company was eventually going to go into liquidation.

[1836] Q Following—how soon was it after 1954, if you recall, that your interest changed from one of, I believe you described it as no serious intent, or to one of looking at the situation more closely?

A Well, we bought the first block of stock rather quickly, and I began to think about it just as soon as we acquired the stock.

Q Again, in 1955, could you describe and, say in a period 1955 to 1958 generally, describe what sort of contact you maintained, or what sort of inquiries you would make with respect to the operations and the management of the company of United Electric?

A Well, I had some reservations about the top management, and I watched it very closely on a day-to-day basis, I would say.

Q Do you recall when for the first time you began, if you did, discussions with Johnny Morris concerning underground or deep mining possibilities that had come to the attention of United Electric?

A Well, I don't think I originated those discussions. I thought that Morris brought the deep mine operations to my attention perhaps in the year of 1958, at first.

Did these conversations, did this type of [1837] communication between you and Mr. Morris, or others at United Electric, continue thereafter?

A Yes, sir, it did.

**Q** If you recall, at Board meetings—let me stop there.

Just for purposes of trying to develop this logically, you went on the Board of United Electric in what year?

**A** 1959.

**Q** And you also became Chairman of its Executive Committee at that time?

**A** Yes, sir.

**Q** Subsequent to 1959, at both Board meetings—or, at Board meetings or at Executive Committee meetings, was there discussion of deep mining possibilities by United Electric?

**A** At times, yes.

**Q** And to what extent would you participate in those?

**A** Well, I would say that I expressed my views each time a deep mining operation came to the attention of the Board.

**Q** If I may take a somewhat arbitrary date, but nevertheless, starting with 1958, had you at that time [1838] formed an intention that United Electric and Freeman would ultimately merge?

**A** Yes, sir.

**Q** Did Colonel Crown at that time—

**A** Yes, sir.

**Q** —or shortly thereafter express a similar intention?

**MR. CUSACK:** Objection, your Honor. He is asking the state of mind of not only of the witness back in 1958, but of Henry Crown back in 1958.

It is hearsay. It is not proper questioning, and the Government objects and moves to strike his answer in regard to his state of mind in 1958.

**THE COURT:** Objection sustained.

**MR. HEDLUND:** Your Honor, I asked if this witness saw any expression of that intent, not as to whether or not Colonel Crown had the intent.

**THE COURT:** Well, "any expression."

To put it plainly, did he ever make a statement to that effect, or was there any discussion?

**BY MR. HEDLUND:**

**Q** Were there any discussions or statements between you and Henry Crown in which Mr. Crown indicated



his intention that there would ultimately be a merger [1839] of Freeman and United Electric?

A I think I can say that I suggested to Henry Crown that there should be a merger; and Henry Crown was in agreement.

MR. CUSACK: Your Honor, the Government objects and moves to strike, unless the witness lays a foundation of where, and when.

THE COURT: Set the dates.

BY MR. HEDLUND:

Q Do you recall when that—do you recall first of all when, if we can describe that as a meeting, when that statement was made, and who was present, and where it was made?

A I don't recall that anyone was present. But the conference took place in Henry Crown's office.

[1840] Q And when would that have been?

A In 1958. And I can't set a month for you.

Q If that was the intention, Mr. Nugent, in 1958, or at least yours, my next question is why did this merger not in fact complete itself in terms of all of the stock of United Electric until 1966?

A About that time—

Q I'm sorry, sir. If you say "about that time," would you indicate which time you are talking about?

A About 1958.

Q Yes, sir?

A About that time, and in the fall of 1958 we started merger discussions with General Dynamics. They failed before the end of the year of 1958. However, we continued to think about the matter, and the merger discussions were again resumed with General Dynamics people in 1959. We were quite busy with General Dynamics, a sizeable merger, and we gave United Electric no thought during that period.

Q What about 1960?

A After 1960, as you may recall, General Dynamics had some problems with commercial airplanes, and again other things were on our mind, and we just didn't get around to it promptly.

**Q** Did Colonel Crown, to your knowledge—and [1841] for that matter, General Dynamics—continue to purchase stock after 1960 in United Electric?

**A** Yes, sir, they did.

**MR. HEDLUND:** Do you have Maguire's Deposition Exhibit No. 1?

**MR. CUSACK:** Yes, I have one.

**MR. HEDLUND:** Do you have a copy for the Court?

(Mr. Cusack tendered a copy to the Court.)

**MR. HEDLUND:** Your Honor, may I interrogate the witness from over here, due to the shortage of copies?

**THE COURT:** Yes, you may.

**MR. CUSACK:** May I join you?

**THE COURT:** You certainly may.

**BY MR. HEDLUND:**

**Q** Mr. Nugent, I show you what has been received in evidence as Maguire Deposition Exhibit No. 1, which is a document dated November 24, 1959, to the shareholders of General Dynamics Corporation requesting the shareholder's proxy, proxies to vote in favor of the merger of Material Service Corporation and General Dynamics.

Is this merger to which you have just been testifying?

**A** Yes, sir.

**MR. CUSACK:** May I say for the record that this is [1842] a Government exhibit?

**THE COURT:** You may.

**BY MR. HEDLUND:**

**MR. CUSACK:** Thank you, your Honor.

**Q** You will note in the fifth paragraph of this document it states that: "Despite the long term needs of the nation's various defense programs, considerations of growth and stability dictate that a conservative corporate management actively seek diversification in commercial, non-defense business."

During the negotiations to which you referred, was anything said by representatives of General Dynamics which could lead you to determine whether or not the statement there is accurate, and whether that was a reason

why General Dynamics was interested in merging with Material Service?

A Yes, sir, it is.

Q I note in the second paragraph it states as follows: "The directors expect to achieve this diversification through development of commercial products stemming from present programs such as"—and I would like to take these seriatim.

Number one, the Corporation's Convair 880/600 jet transports.

[1843] What has happened to that program, if you know?

A Both have been discontinued.

[1844] Q It also says, second, Canadair's commercial turbo-prop CL-44 and CL-540 aircraft.

What has happened to these programs?

MR. CUSACK: Your Honor, the Government objects to this line of questioning as being wholly immaterial and irrelevant to the issue of this lawsuit.

This lawsuit concerns the merger of United Electric and the Material Service-General Dynamics, and elimination of competition between Freeman and United Electric.

THE COURT: Do you have any comment?

MR. HEDLUND: Your Honor, there is a raft of evidence offered with respect to General Dynamics by the Government in this case, and I think that this is clearly related to that.

THE COURT: He may answer, subject to the objection.

BY MR. HEDLUND:

Q My question was with respect to the turbo-prop CL-44 and CL-540 aircraft.

BY THE WITNESS:

A The CL-44 was a spring tail turbo-prop freighter, no longer being produced.

I don't recall what happened to the CL-540, but we are no longer making it.

[1845] Q It next refers to General Atomic's nuclear research, maritime and power reactors.

What has become of that program?

A That was a high temperature gas reactor, primarily, and that was sold to Gulf Oil.

Q It next mentions Liquid Carbonics industrial gases. What has become of that?

A General Dynamics was ordered by the Government to divest itself of Liquid Carbonics.

Q It next refers to Stromberg-Carlson's telephone and high fidelity sound equipment.

What has happened to that, if you know?

A Stromberg-Carlson's telephone business is still quite active. The high fidelity and sound equipment has been discontinued.

MR. CUSACK: Your Honor, I hate to be picayunish, but the Government did not order General Dynamics to divest itself of Liquid Carbonics. It was ordered by the District Court.

I think counsel should stipulate to that.

THE COURT: Was it in an action filed by the Government?

MR. CUSACK: Yes, your Honor, it was. But it is an [1846] order of the Court, not by the Government.

THE COURT: All right, the record may so show.

BY MR. HEDLUND:

Q Mr. Nugent, there is in evidence the fact that at a Board meeting of General Dynamics of May 25, 1961, the following:

The Chairman stated that the corporation—which is General Dynamics—owned common stock of certain companies as follows: United Electric Coal Company, 250,131 shares; Truax-Traer Coal Company, 32,300 shares; American-Marietta Company, 8,795 shares; and United Utilities Incorporated, 158,400 shares.

He outlined the reasons why it might be advisable to sell part or all of the stock of such companies,

and recommended that authority be granted to take such action.

After discussion, upon duly made, seconded, and unanimously carried motion, it was resolved that the proper officers of the Corporation, with the approval of the Chairman of the Board and Counsel for the Corporation be, and hereby are authorized at such time as they deem it advisable to sell and to take any and all action which may [1847] be necessary in connection with the sale, or part of all of the common stocks of which I have just listed.

Mr. Nugent, do you know why such a subject came up at that meeting, and why such a resolution was passed?

A Well, as a result of the commercial airplane problem at that time the money situation was quite tight, and they were looking for places to acquire some money. [1848] Q In point of fact, did General Dynamics ever sell any of that 250,103 shares of United Electric?

A Henry Crown was strongly opposed to it and the stock was not sold.

Q Why was he opposed to it, if you know?

A Because he intended to eventually merge United Electric into the Freman Coal Corporation.

Q Would you have been opposed to such a sale?

A Yes, sir?

Q Mr. Nugent, I show you what has been received in evidence as Defendants' Exhibit 9, which is a letter from you, as President of Freeman Coal Mining Corporation, to Mr. Frank F. Kolbe, President of the United Electric Coal Companies, dated February 5, 1959.

My first question is, you were not at that time on the Board of United Electric, were you?

A I think not.

Q My next question is, it refers in the first sentence, "We have your proposed plan for Buffalo Creek."

Was that proposed plan a strip or deep mining?

A It was a plan to go underground, drifting in off the high wall.

MR. HEDLUND: Your Honor, I will be moving into a new area now.



[1849] THE COURT: We will go for another 15 minutes, to make up for some of the time we lost.

BY MR. HEDLUND:

Q Mr. Nugent, I hand you what has been received in evidence as Defendants' Exhibit 23, which is a three-page—I'm sorry. I stand corrected. A five-page document, the first page of which is a memorandum on the memorandum stationery of Irving Crown, bearing a date of 6/16.

Attached to that is a memorandum from JMN to Frank, dated June 11, 1964.

Attached to that is a three-page draft titled "President's letter to shareholders."

My first question is, can you identify the initials on the first memorandum on the stationery of Irving Crown?

A It is Irving Crown's writing, and it is his initials.

Q And does the "Frank" refer to you.

A Yes, sir, it does.

Q Was that memorandum actually prepared on July 16th of 1964?

A Yes, sir, it was.

Q In 1964, what responsibilities, if any, did [1850] Irving Crown have with respect to United Electric?

A He was on the Board of United Electric.

Q Could you, Mr. Nugent, please, decipher the writing, read the writing that appears on the memorandum from Irving Crown.

A "I note all comments are bullish on future. No hint that we are reaching end of line on reserve replacements? Please see."

MR. CUSACK: May the record show that there is a question mark after "replacements"?

THE COURT: I think the record speaks for itself. Is this in evidence?

MR. CUSACK: Yes, you Honor, it is. But I thought perhaps for the purpose of the transcript—

THE COURT: Well, all right.  
Proceed.

BY MR. HEDLUND:

Q Mr. Nugent, what is dust?

A Dust is fine coal that is removed from, let's say, a one and a half inch by Zero coal generally for customers that are prepared to pay a premium price for coal from which dust is removed.

Q What is the practice in the past to dispose or otherwise throw away the dust that was so removed [1851] from the coal that you have described?

A There were times when, in the initial stages, that the dust just wasn't marketable. It presents a handling problem. And in the early stages we threw it on the gob pile. Later we found a market for it. It was sold at a price under the cost of production. However, the combined realization from the dust and the double screen size or premium product was profitable.

[1852] Q Then is it true that in the sale of dust by Freeman, if you will, that you do not actually lose money by such a sale?

A Yes, sir.

Q And when you say that it is sold below the cost of production, this is an unallocated cost of production, is it not, among all of the coal, oil—

A Sold below the minimum run cost of production.

Q Is there any incremental cost in selling dust or producing dust for sale above and beyond the production costs for the coal of the sizes from which dust has been removed?

A I'm not sure that I understand that question.

MR. HEDLUND: Read the question.

THE COURT: Read him the question.

Q (Read by the Reporter.)

BY THE WITNESS:

A If you mean do we incur an additional cost because we do produce this, yes, we do.

BY MR. HEDLUND:

Q And you are able to recover that additional cost, are you not?

A Yes, sir. Yes, sir, we are.

Q You spoke of the difficulties of handling dust. [1853] Could you tell me what those are, please?

A It is difficult to retain it in the car. It is subject to blowage. In the early stages we found when we put a car of dust behind the box car, when it reached destination you had a half a car of dust. Those were some of the things we had to overcome, too. It tends to rat hole when it is put in a bin in a boiler room.

Q Could you explain what you mean by "tends to rat hole"?

A Rat hole. The dust is retained on the sides of the bin, and dust flows down through the center.

We later learned by putting vibrators on these bins we could unload it.

MR. HEDLUND: I would like to hand to the Reporter to mark as a defendants' exhibit—if I may, could I go off the record?

THE COURT: You may.

(There was a discussion off the record, after which the following further proceedings were had herein, to-wit:)

MR. HEDLUND: Would you mark that as Defendants' Exhibit No. 229, and having done so, would you hand it to the witness, please?

MR. CUSACK: Just a minute. May we have a copy?

[1854] MR. HEDLUND: Yes.

(The document was marked as Defendants' Exhibit No. 229, for identification.)

[1855] BY MR. HEDLUND:

Q I ask you, Mr. Nugent, is the information set forth on this document with respect to the estimated deep tonnage dedicated to existing mines of Freeman and other coal reserves of Freeman true and accurate to the best of your knowledge and belief?

A Yes, sir, I think so.

Q This totals, does it not, something in the neighborhood of 483 or 484 million tons of coal.

A Well, I haven't added them, but I would accept that.

Q Could you give me an estimate of approximately what percent of these reserves have a sulphur content of less than 2.5 percent?

A The coals produced by Orient No. 3, Orient No. 6 and Orient No. 4.

Q Are in the category of sulphur content less than 2.5 percent?

A 2.5, I thought you said.

Q Yes, 2.5.

A That is right.

Q Would that then mean that all of the reserves assigned here to Orient No. 3, 4 and 6, all or substantially all would be in that sulphur category?

[1856] A Would you state that again, please.

THE COURT: Read the question.

Q (Read by the Reporter.)

BY THE WITNESS:

A Yes, Orient No. 3, 4 and 6.

BY MR. HEDLUND:

Q Your answer is yes, they would be?

A Yes, sir.

Q Would you be able to give me an estimate as to what percent of the reserves shown on the second page under the title "Other Coal Reserves" are in a sulphur content category of 2.5 percent or less?

A All of the Jefferson County reserves may not be below 2.5 percent. The northern part of our acreage could well run a little bit above that.

Now, all of the reserves assigned or that may be assigned to No. 3 and to No. 6 will run in the neighborhood of 1.5 percent in sulphur.

The reserves on the first page assigned to 3 and 6 are somewhat flexible in that we could use additional reserves not now assigned at some future date if it appears to be economical.

Q I see that the totals for Jefferson and William Counties—those are the counties for Orient No. 3, 4, [1857] 5 and 6, are they not?

A Yes, sir.

Q I see these total—

A I can't say that all of the reserves unassigned in Williamson County will run below 2.5 percent in sulphur.

Q Could you give me some estimate as to roughly what percentage it would be?

A It would be a guess. I would say half.

Q What about Jefferson County?

A Jefferson County, again, that is not clearly defined in that the reserves that will be assigned to Mine No. 7 may not all run below 2.5 percent.

Mine No. 7 is the mine that is planned for future date.

Q Of the 97 million tons in Jefferson County, would half of these reserves be less than 2.5 percent sulphur or would it be more than half?

A Probably less than half.

[1858] Q There is an advertisement in evidence, Mr. Nugent, referring to, I believe, the plans of Freeman to open up Orient No. 7, Orient No. 8, and a new mine in central Illinois. What is the status of those plans, if any?

A We have abandoned the idea of opening No. 8. We had put a manned shaft, a new manned shaft at the Orient No. 3 mine. We will assign more acreage to Orient No. 3.

We have room now in reserves only for one more mine in Jefferson County. That would be No. 7.

Q Would you be able to estimate when Orient Mine No. 7 will be open?

A Well, not at this moment. We haven't completed No. 6. As soon as we get No. 6 finished, which will be sometime the latter part of this year, we will then go to work on No. 7.

Q Can you tell me approximately what you estimate is for—well, let me ask you this first. What was the total production of Freeman in 1969?

A I would say about 8 million tons, and that is a guess now.

Q What is your estimate for the production of Freeman in 1970?

A It will increase. We cut back at No. 5 because [1859] of some roof problems that we had there. That mine was producing about 2 million tons a year. We have



cut it back to 1 million tons a year, perhaps a little more.

Orient No. 6 is now producing at the rate of about 8,000 tons a day. By the end of the year, we should have it up to 12,000 or 13,000 tons a day.

Q Mr. Nugent, I show you what has been received in evidence as Defendants' Exhibit 35, which is a copy of a coal contract between United Electric Coal Companies and Central Illinois Light Company, dated September 30, 1968. I direct your attention to the supplement of that contract and a portion of paragraph 3, about in the middle, where it reads as follows:

"In the event that prior to the expiration of this contract reserves of seller in the No. 5 and 6 seams of coal in Fulton County are exhausted, seller will make shipments under this contract from present or planned mines of Freeman Coal Mining Corporation located in the central Illinois field where the company has reserves of No. 6 seam coal approximating 400 million tons."

My question is, to what does that 400 million tons refer?

A That is coal in place rather than recoverable [1860] coal.

Q What percentage of recovery—

A It is about 250 tons of coal recoverable at the outside.

Q You say 250?

A 250 at the outside.

Q Million that would be?

A 250 million tons at the outside. That could well be a little on the high side.

Q Mr. Nugent, is there a possibility that the Cuba mine will close this year?

A I think so.

Q Would you tell me why?

A Well, we are into old works there; we are running into difficulty. When our tonnage gets down to something like 300,000 tons a year, it won't be economical to continue to operate it.

Q Why does old works interfere with strip mining?

A We are digging the No. 6 seam coal. The No. 5 seam underneath it was mined many years ago.

Q Would that have been by deep mining?

A By deep mining, yes.

Q What sort of problems does that pose?

A It is an unstable area.

[1861] Q Are there any properties at the Cuba mine that you were unable to purchase?

A Yes. We had a tract of land there that for many years we thought we should acquire, known as the Murphy tract. We thought it contained a million and a half tons of coal.

We couldn't understand why this man wouldn't sell, and be included in our reserves, because we were able to pay and could well afford to pay him three times the value of his farmland. We just did not acquire it. He would not permit us to drill it and we could never get an option to drill it. We have mined up to it and around it.

It now appears that there was not a million and a half tons there. We ran into some voids and some wash-outs.

Had we been able to acquire the Murphy tract, we could have acquired a tract beyond that known as the Phillips tract. We have given up, of course, and moved away and their equipment is gone.

We never will know why Mr. Murphy wouldn't take three times the value for his land, but it belonged to Mr. Murphy.

Q In terms of your mining operation at Cuba, [1862] would it be feasible to move the equipment back, to try to come back to pick up this acreage if Mr. Murphy ever changes his mind?

A No, sir. We have burned our bridges behind us.

Q Do you recall approximately what the estimated tonnage was in the Phillips' tract that you were also unsuccessful in acquiring?

A Well, not offhand. It wasn't as great, of course, but it was a worthwhile piece of land.

THE COURT: Would now be a good time to break?

MR. HEDLUND: Yes, your Honor.

**THE COURT:** All right. We will recess until 10:00 o'clock tomorrow morning. Unless something unexpected comes up, we should get started by 10:15 or 10:30 at the latest and go all day.

Thank you.

(The hearing in the above-entitled cause was recessed to 10:00 a.m., Thursday, April 16, 1970.)

[1863]

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

No. 67 C 1632

UNITED STATES OF AMERICA, PLAINTIFF

*vs.*

GENERAL DYNAMICS CORPORATION; THE UNITED ELECTRIC  
COAL COMPANIES; and FREEMAN COAL MINING COR-  
PORATION, DEFENDANTS

Before HON. EDWIN A. ROBSON, Judge,  
Thursday, April 16, 1970,  
10:30 o'clock a.m.

PRESENT:

MR. JOHN THOMAS CUSACK,  
MR. ROBERT L. EISEN,  
MR. RONALD L. FUTTERMAN,  
MR. HUGO SIMS, and  
MR. RICHARD J. BRAUN,

appeared for Plaintiff;

MR. HAMMOND E. CHAFFETZ,  
MR. REUBEN L. HEDLUND,  
MR. DONALD G. KEMPF, JR., and  
MR. RICHARD H. IRVING, III,

appeared for Defendants.

ALSO PRESENT:

MR. JAMES M. FOLSOM

[1864] THE CLERK: Case on trial.

THE COURT: Good morning.

Are there any matters to take up with the Court be-  
fore proceeding?

MR. CUSACK: Good morning, your Honor.

With the kind concurrence of Mr. Hedlund, we would like to take a witness out of order. He is Mr. Hopper of the Ayshire Collieries.

THE COURT: All right, have the witness take the stand.

(Witness duly sworn.)

HOLLIE HOPPER,

called as a witness by and on behalf of the Government,  
was examined and testified in rebuttal as follows:

DIRECT EXAMINATION

BY MR. CUSACK:

Q Please state your full name.

A Hollie Hopper.

Q What is your home address, please?

A 620 Lawndale Drive, Plainfield, Indiana.

Q By whom are you employed, sir?

A Ayrshire Coal Company, Division of American Metal Climax.

Q What is your position at Ayshire?

[1865] A Vice president of operations.

Q How long have you held that position?

A Since 1967.

Q What position did you hold prior to that time?

A General Superintendent of the Mining Operations.

Q How long did you hold that position, approximately?

A Nine years.

Q In reference to your Sun Spot Mine, Mr. Hopper, has the Sun Spot Mine of Ayshire been profitable in the past?

A Yes. We consider Sun Spot a profitable operation. It has had periods in which it was less profitable than other periods.

Q In 1969 where did the Sun Spot Mine rank among the Ayshire mines in profitability?

A Either in fourth or fifth position.



Q How many mines did you operate in 1969?

A Ten operations.

[1866] Q Is the Sun Spot Mine profitable now?

A Yes, it is.

Q What do you expect to be the profitability of Sun Spot in the future?

A We would expect it to be a profitable operation.

Q Sir, what is the overburden ratio of the remaining coal reserves of Ayrshire at Sun Spot?

A The average overburden ratio is approximately 30 plus, between 30 and 31.

Q To one?

A To one, yes.

Q What do you expect to be the remaining life of the Sun Spot Mine?

A Some 14 to 15 years.

Q Is that with the present equipment?

A With the present equipment.

Q Sir, based on your knowledge and experience in the mining business, has stripping ratios in strip mines been increasing over the past 25 years?

A Yes, they definitely have.

Q Could you tell us, sir, when were the Sun Spot Mines—excuse me. Let me rephrase that question.

When were the Sun Spot coal reserves acquired by Ayrshire?

[1867] A In the late 1950's.

Q Is Ayrshire at the present time prospecting for strip coal reserves in Illinois, Indiana and west Kentucky, for the possible opening of a new mine?

A Yes.

Q Has Ayrshire acquired strip coal reserves in Illinois, Indiana, and west Kentucky since 1960 for new strip mines?

MR. KEMPF: We are going to object unless he breaks this down, as we have in the past, according to states.

MR. CUSACK: I don't understand. What states?

THE COURT: According to states.

MR. KEMPF: Yes.

BY MR. CUSACK:

Q Has Ayrshire acquired strip coal reserves in Illinois since 1960, for the possible development of a new strip mine?

A Yes, sir.

Q Has Ayrshire acquired strip coal reserves in Indiana since 1960 for the possible development of a new strip mine?

A Yes, sir.

[1868] Q Has Ayshire acquired strip coal reserves in west Kentucky since 1960 for the possible development of a new strip mine?

A No, sir.

Q Mr. Hopper, do you know of any other coal producers who have acquired since 1960 any strip coal reserves in Illinois for the development of a new strip mine?

A Yes.

Q Since 1960, has Ayshire acquired new deep coal reserves in Illinois for the development of future underground mining?

A I beg your pardon. Since what date?

Q Since 1960, has Ayshire acquired new deep coal reserves in Illinois for the development of future underground mining?

A Yes.

Q Since 1960, has Ayshire acquired new deep coal reserves in Indiana for the development of future underground mining?

A We have some deep reserves under option acquired since 1960.

Q Would these reserves be for the possible development of a future underground mine?

[1869] A Yes, it is a possibility.

Q The deep coal reserves which Ayshire has acquired since 1960 in Illinois, would this be for the possible future development of an underground mine in Illinois?

A Yes, it is a possibility.

Q Could you tell us, sir, how Ayshire got into the deep or underground mining business?

A Well, early in the 1950's, Ayshire acquired two underground operations, small operations: one in central Indiana and one in the southern Illinois area.

Q In regard to the mine in central Indiana, could you tell us the approximate tonnage of that mine?

A Approximately 400,000 a year.

Q Could you tell us the approximate tonnage of the mine acquired in southern Illinois?

A About 250,000.

Q Following this, sir, did Ayshire itself open up a new deep mine?

A Yes. In 1959, Ayshire opened what is known as the Thunderbird Mine.

Q Where is that located, sir?

A Well, it is located at Shelburne, Indiana, [1870] which is six or eight miles north of Sullivan, Indiana.

Q Is this a profitable mine, sir?

A No, it is not.

Q Could you tell us the reason?

A Well, number one, it has very poor roofing conditions which provides us with an exorbitant cost in that respect. Secondly, probably Ayrshire negotiated a rather poor contract realization-wise. Frankly, the price of the coal was just much too cheap.

Q In your opinion, sir, do you feel that a coal company with greater experience in deep mining than Ayshire could have done any better with Thunderbird?

A Well, knowing the physical conditions that we have encountered there, I rather doubt that anyone could have made a profitable operation out of it.

Q Where did Ayshire obtain the personnel to staff the Thunderbird Mine?

A Well, having acquired these two underground operations, small underground operations in the early fifties, the personnel from those operations provided a nucleus to build an organization at the Thunderbird Mine.

[1871] Q Does Ayrshire plan to open up any new deep mines in Illinois?

A We have no definite plans. However, we have feasibility studies underway that will determine the final outcome.

Q Does Ayrshire plan to open up any new mines in Indiana?

A Not at the present.

Q Does Ayrshire own a deep coal reserve deposit known as the Denmark Deep?

A Yes, we do.

MR. CUSACK: I think it might be helpful if we could locate it on the map.

THE COURT: You may.

BY MR. CUSACK:

Q Mr. Hopper, directing your attention to what has been received in evidence as GX Nugent Deposition Exhibit 38, a map entitled "Shipping Coal Mines in Illinois," can you tell us approximately where the Denmark Deep reserves are located?

A Well, it is down there—

THE COURT: You can step down and point to it, Mr. Hopper.

MR. KEMPF: Mr. Cusack, I don't mean to interrupt [1872] your interrogation, but, as you know, I was planning to provide the Court with a copy of that map. If you would like, I will do so now.

THE COURT: Oh, it is not necessary. I have seen that pointed to. I think I know a little bit about the State of Illinois, too.

All right, you may proceed.

BY MR. CUSACK:

Q Mr. Hopper, could you just tell us generally where the reserves are located.

A It is northwest of DuQuoin, almost north of Pinckneyville, somewhere in this general area right in here.

Q Is it fair to say that the Denmark Deep reserves are located several miles north of Pinckneyville, Illinois?

A Yes, a few miles north of Pinckneyville.

Q Mr. Hopper, do you anticipate that the Denmark Deep Mine will be mined in the future?

A Yes. I feel that the Denmark reserves will be mined in the future. Just how much in the future, I can't say. I believe it largely depends on, oh, the new environ-

mental legislation that is being passed.

Q Could you give us any time approximately in which you feel this mine might be opened?

[1873] MR. KEMPF: Your Honor, I object. The witness said he could not predict how far in the future it would be opened. To ask him for a specific time in light of that—

THE COURT: Well, if he can give an approximate date, he may.

BY MR. CUSACK:

Q If you can, give an approximate date.

A I really have nothing to go on at this time. We would hope to open it within a few years, but I can't see it at this point.

Q Is the Denmark Deep reserves, sir, fairly well situated?

A Yes, they are reasonably well situated, No. 1, because they are reasonably close to what we have as a strip reserve some 15 miles from there. We are expecting to create a market with our strip reserves which might carry over into the deep reserve area.

However, there are some new developments that are presenting possible problems of transportation in view of the possible dredging of the Kaskaskia River which may put other people in a better position than us.

Q I forgot to ask you one question, sir, in [1874] regard to stripping, and it is my last question.

Mr. Hopper, do you know of any other coal producers who have acquired strip coal reserves in Illinois for the development of a mine since 1960?

A I beg your pardon. Would you repeat that?

Q Do you know of any other coal producers or coal operators who have acquired any new strip coal reserves in Illinois since 1960 for the development of a new mine?

A Yes, I do.

[1875] MR. CUSACK: That is all, your Honor. Thank you, sir.

THE COURT: You may cross examine.



MR. HEDLUND: May we have just a moment?

THE COURT: All right.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

MR. HEDLUND: Your Honor, could we have a brief recess?

THE COURT: I will be recessing again at 11:30.

MR. HEDLUND: Then if we could have just a couple more minutes.

THE COURT: You may. Let us proceed.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

MR. CUSACK: Your Honor, I beg leave of Court. Mr. Futterman reminds me I have to ask one slight question, and I would appreciate—

THE COURT: Any objection?

MR. KEMPF: No objection.

BY MR. CUSACK:

Q Mr. Hopper, prior to Ayshire's acquisition [1876] of the two deep mines which you have testified about, was Ayshire solely in the strip mining business prior to that time?

A Yes.

MR. CUSACK: Thank you, sir. Thank you, your Honor.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

THE COURT: Cross examination.

# CROSS EXAMINATION

BY MR. KEMPF:

Q Mr. Hopper, isn't it true that during fiscal year 1967 Ayshire's Sun Spot Mine had a rate of return on investment of roughly between 4 and 5 percent?

A Roughly so, yes.

Q Isn't it true that during fiscal 1968 Sun Spot was a marginal operation, and that during the latter portion of that fiscal year when the mine was operating at overburden ratios of from 33- to 36-to-1 the mine was not operating profitably?

A This is true.

Q Isn't it true, Mr. Hopper, that largely as a result of the operations at the Sun Spot Mine during [1877] fiscal 1968 and in particular in view of the difficulties encountered with spoil stability at the higher ratios mined during that year, Ayrshire has redefined its reserves at the Sun Spot Mine?

A Yes, we have.

[1878] Q And is it not true that Ayrshire has changed the limit of the depth at which it will strip at the Sun Spot Mine from the former limit of 80 feet to a present limit of 700 feet?

A That is correct.

Q And isn't it true that Ayrshire has made the decision that in the future it will not mine on a continuing basis at the Sun Spot at overburden ratios exceeding 30 to 1?

A On a long-term average, yes, we do not expect to exceed approximately 30 to 1.

Q Isn't it true that the current profitability of the Sun Spot and the profitability during fiscal 1969 is largely due to the fact that the overburden ratio at which the mine has operated during these periods is around 25 to 1 or 26 to 1 and the fact that no blasting is required in the overburden removal operation?

A This is largely contributing to the profitability.

Q You testified concerning the Thunderbird Mine during the course of your direct examination by Mr. Cusack. You testified that prior to opening the Thunderbird Mine Ayrshire had acquired two companies which did conduct underground mining operations—

MR. CUSACK: Objection, your Honor. The testimony [1879] was that it had acquired two mines.

MR. KEMPF: My question would clear this up.

BY MR. KEMPF:

Q Did you acquire two companies known as the Little Betty Coal Company and the Carmac Coal Mining Corporation?

A Yes.

Q And they operated the Little Betty and the Carmac Mines?

A Yes.

Q You indicated that even someone with more experience and expertise, in your view, probably would not have operated the Thunderbird Mine successively. My question is: Isn't it quite possible that someone who did have a greater amount of experience and expertise in deep mining at that time would not even have opened the Thunderbird Mine?

A Well, this is entirely possible. This is a case of judgment.

Q You indicated that the mine was not profitable. Isn't it a fact that within two years after the opening of the mine it was so clear that mine was not going to be profitable over its life that Ayrshire at that time wrote off \$5 million of its investment in the [1880] Thunderbird Mine?

A This is true.

Q And I gather that since that time operating losses have continued?

A Operating losses have continued at that operation for every year of its life except, I believe, for two fiscal years.

Q And that was opened in 1959, you testified?

A Yes, sir, it was.

Q So that in the 11 years, nine of those 11 years the mine has lost money on a operating basis?

A Yes.

[1881] Q In your judgment, Mr. Hopper, if Ayshire had it to do over again, do you think it would be likely that they would open the Thunderbird Mine, in view of what they now know?

A In view of what they now know, absolutely not.

Q Mr. Cusack questioned you about Ayshire's exploration activities in Illinois, Indiana and west Ken-

tucky. I would like to ask a few questions along the same line.

Did Ayshire investigate the possibility of strip reserves in Menard County around Petersburg?

A Petersburg, Illinois?

Q Yes.

A Yes.

Q After exploring for reserves in Menard County, Ayshire decided not to take any options in that area, isn't that true, Mr. Hopper?

A This is true.

Q One of the reasons leading Ayshire not to take options in Menard County was the fact that Ayshire questioned the strippability of those reserves that were located there in view of the depth of the coal and the unconsolidated nature of the overburden, isn't that true? [1882] A This is true.

Q In view of the fact that in addition to United Electric, Ayshire also investigated and turned down coal reserves in the Menard County, wouldn't you agree that it would be improper to regard United Electric's failure to acquire the reserves located there as an indication that the company was not making serious efforts to increase its strip reserves?

MR. CUSACK: I object. It calls for speculation on the part of the witness.

MR. KEMPF: I think this witness is qualified to answer that, your Honor. Mr. Cusack called him to testify to these matters.

MR. CUSACK: It is pure speculation, your Honor.

THE COURT: The objection is sustained.

BY MR. KEMPF:

Q Let me look at it a different way. I think this will overcome that objection.

Wouldn't you agree, Mr. Hopper, that the fact that a coal company had devoted time and money to the investigation of the field such as that located in Menard County, that that is at least one indication that the company is making serious efforts to enlarge its strip reserve holdings?

[1883] MR. CUSACK: Same objection, your Honor.

THE COURT: The objection is overruled.

BY THE WITNESS:

A Yes. I think it would indicate that the company was attempting to acquire reserves. This is true of all coal companies. They continually carry on an exploration program, so far as I know.

BY MR. KEMPF:

Q I would like now to ask you about another area of reserves in the state of Illinois.

Ayshire investigated, did it not, the coal reserves controlled by one Kenneth Youngs, southeast of the town of Mount Vernon, near the Belle Rive area, is that not true, Mr. Hopper?

A Yes, sir.

Q At the time of its initial investigation, Ayshire concluded, did it not, that largely on the basis of the analysis of the characteristics of the coal, that the field was not economically strippable?

A Well, I would rather say that it was not—I wouldn't agree that it was not economically strippable. It might not be an economical operation because we could not correlate the analysis of the coals to come up to those analyses as representative of the [1884] field. We had failed in our procedures in some manner, which we later did reconcile and find what our problem was.

Q Isn't it your view that the reason for that was that the information supplied to you at the time of your initial investigation by Mr. Youngs was not sufficient in detail to enable an accurate appraisal of the coal's characteristics?

A Well, he had very detailed information and a great deal of information. Probably the greatest problem that we encountered in our failure to recognize and support his analysis was that we did not recognize the procedures or the manner in which he had obtained his cores and channel samples for analysis, and this basically was our problem in not being able to correlate analyses.

[1885] Q And as a result of that problem, you initially dropped your interest in that field, is that correct?

A We did.



**Q** You know also, do you not, Mr. Hopper, that both Peabody Coal Mining Corporation and Stonefort Coal Mining Corporation also investigated that field and also dropped interest in that field?

**A** I have heard that—I understood that Peabody Coal Company had investigated it and turned it down. I don't believe I was aware that Stonefort had.

**MR. CUSACK:** I move to strike on the ground of hearsay, your Honor, the last answer.

**MR. KEMPF:** He has indicated he understood this had happened, and he said he had not heard of the other. Why don't we have the answer read back?

**THE COURT:** I heard the answer. It may stand. Proceed.

**BY MR. KEMPF:**

**Q** I will now ask you a question similar to my question about Menard County. Wouldn't you agree, Mr. Hopper, that the very fact that United Electric had devoted its time and money to the investigation of the coal reserves in this area is at least one indication that that company was making serious efforts to enlarge its strip reserve holdings?

[1886] **MR. CUSACK:** I object, your Honor, on the ground that it calls for speculation by the witness.

**THE COURT:** The objection is overruled. You may have a standing objection to any similar question.

**MR. CUSACK:** Thank you, your Honor.

**BY MR. KEMPF:**

**Q** You may answer, sir.

**A** I think it is a clear indication that they were attempting to find and presumably acquire additional reserves.

**Q** Mr. Cusack discussed with you the so-called Denmark Deep acreage. Isn't it a fact, Mr. Hopper, that the likely cost of recovery of the Denmark Deep and the nearby Round Prairie Field would be greater than that of the strip reserves in Belleville against which this coal would have to compete, such as specifically Ayrshire's own Denmark strip acreage?

A Well, I can only answer for that portion that relates to our Denmark Deep, not the Round Prairie, because I know nothing about it. But, yes, we will produce coal more cheaply in our strip Denmark field than in the deep Denmark area.

[1887] MR. CUSACK: Will counsel stipulate that the situation at Denmark is the same as at Round Prairie, as indicated by his question?

MR. KEMPF: I will indicate to Mr. Hopper—

I will not stipulate because I am, obviously, like the witness, he is not familiar with our property and we are not familiar with his.

I will indicate, however, that the coal is very close to the field that United Electric owns known as the Round Prairie Field.

BY MR. FEMPF:

Q Is that not true, Mr. Hopper?

A Yes, I am sure that is correct.

Q Isn't it a fact, Mr. Hopper, that in attempting to sell the coal from the Denmark Deep area competitively, it would be at a competitive disadvantage from a transportation viewpoint in comparison to other deep reserves held in the Belleville area such as Peabody's undeveloped reserves along the Kaskaskia River?

A If and when the Kaskaskia is canalized, they will be in a better position freight-wise to offer coals to the market.

Q Isn't it a fact that the higher sulphur content of the Denmark Deep acreage might be another factor further delaying the development of those reserves?

[1888] A Yes. I believe I stated earlier that I thought that, due to the new environmental legislation that is being passed, that it place these reserves in a doubtful position for their mineability in the very near future.

Q Mr. Cusack asked you about the Denmark strip acreage. How long did Ayshire control the Denmark strip acreage before the decision was made to open a mine there?

A Well, we have held the Denmark strip acreage since either the year 1926 or 1927.

Q So, that is over 40 years?

A Yes, that is true. We acquired it at a tax sale.

Q Mr. Cusack also referred to the fact that since 1960, mines haven't been opened on new strip reserves.

MR. CUSACK: I did not refer to that, your honor. That is not the question I asked.

THE COURT: Would you read the question.

[1889] THE REPORTER: "Q Mr. Cusack also referred to the fact that since 1960, mines haven't been opened on new strip reserves."

MR. KEMPF: "Have" is the word I said, not "haven't."

MR. CUSACK: I did not ask that question, your Honor.

My question was "Do you know of any other coal producer which have acquired new strip coal reserves for the possible development of a new mine in Illinois since 1960?"

MR. KEMPF: I stand corrected.

THE COURT: All right Revise your question.

MR. KEMPF: Yes, your honor.

BY MR. KEMPF:

Q Isn't it a fact, Mr. Hopper, that coal reserves presently available for acquisition or coal reserves acquired in recent years are bought with the expectation by the company acquiring the reserves that they will be mined in the long run rather than the short run, and that many of these reserves may not be developed for 30, 40, 50 or more years?

MR. CUSACK: I object, your Honor. I think you better lay a foundation that he has information on that.

THE COURT: Well, if the witness knows, he may answer.

MR. KEMPF: I think this one clearly follows up [1890] Mr. Cusack's question.

THE COURT: I have ruled. I said that if the witness knows, he may answer.

BY MR. KEMPF:

Q Would you like the question back, again?

A I am not quite sure I understand the question.

THE COURT: Would you read the question, please.

Q (Read by the Reporter.)

BY THE WITNESS:

A Well, if I may, I believe there are two questions to be answered there. At least I see it as a two-part question.

THE COURT: You are quite right.

BY THE WITNESS:

A No. 1—

THE COURT: Reform your question. There was no objection on that ground. I thought maybe the witness could answer it.

MR. KEMPF: Well, if the witness understands both questions, he may answer them, or I will—

THE COURT: Do you understand both questions?

THE WITNESS: Yes, sir.

THE COURT: All right.

[1891] BY THE WITNESS:

A Well, number one, yes, reserves that may be acquired here in the next few years, or reserves that have been acquired in the most recent past, it is entirely possible that a great portion of them will not be mined for a number of years.

When you say 30 or 40 years, I probably could not agree with the 30 or 40 years. I will have to say somewhere in the future.

Now, the other part of the question that I believe I understood, some of the reserves that have been acquired and may be acquired in the future, I can foresee that they could be developed immediately.

BY MR. KEMPF:

Q Just as Ayrshire developed its Sun Spot reserves shortly after their acquisition?

A Yes, because primarily, now, you are talking about—you are putting reserves in one category. There are two kinds of reserves: deep and strip.

Q To follow that, just as the Banner Mine of United Electric was opened up shortly following the acquisition of those reserves?

A Yes.

Q You raised the fact that these are both strip and deep [1892] reserves. I would like to address myself to that for a moment.

Isn't it a fact, Mr. Hopper, that it is common knowledge within the coal industry that strip reserves available for acquisition are in extremely short supply, and that if there were known economically recoverable reserves, there would be an eager scramble to acquire them?

A Yes, this is true.

Q Mr. Hopper, are you familiar with the mining engineering firm known as Paul Weir & Company?

A Yes.

Q Ayrshire Collieries retained the Paul Weir Company to prepare an analysis of Ayrshire's property in connection with Ayrshire's merger discussions with Ashland Oil and American Metal Climax, is that correct?

MR. CUSACK: Objection, your Honor. This is outside the scope of the direct examination. We didn't even mention Paul Weir.

THE COURT: Do you have any comment?

MR. KEMPF: Yes, I do, your Honor. This witness is being called to rebut the evidence concerning the areas that he is going into this morning, that has been introduced by the defendants. One of the important [1893] items of evidence is a report which was prepared on these subjects by the Paul Weir Company.

I am merely asking this witness whether he is familiar with this company. I have one additional question, and that is to find out his regard for this company.

MR. CUSACK. I believe it is still outside the scope. I don't see what relevance it has to the direct examination.

MR. KEMPF. It is the very evidence he seeks to rebut, your Honor.

THE COURT: All right. Let me inquire, you are putting this witness on in rebuttal, is that correct?

MR. CUSACK: Yes, your Honor.



THE COURT: To rebut evidence introduced by the defendants.

MR. KEMPF: If I might, your Honor, if Mr. Cusack will stipulate that none of Mr. Hopper's testimony in any way rebuts any of the information in this exhibit, I will be happy to withdraw my line of inquiry.

MR. CUSACK: No, your Honor, I won't.

THE COURT: All right. The objection is overruled then.

MR. KEMPF: Can I have the question re-read?

THE COURT: Read the question.

[1894] THE COURT: Can you ask the question again?

MR. KEMPF: Yes, I can.

BY MR. KEMPF:

Q Ayrshire Collieries retained Paul Weir Company to prepare an analysis of Ayrshire's properties in connection with Ayrshire's merger discussions with Ashland Oil and American Metal Climax, isn't that correct, Mr. Hopper?

A Paul Weir Company was not retained specifically to make an evaluation of Ayrshire for Ashland or Amex.

Q They were retained by you to make such an analysis?

A Correct.

Q The Paul Weir Company is one of the world's most widely known and highly regarded mining engineering companies, isn't it, Mr. Hopper?

A Yes. I believe they enjoy a very fine reputation.

Q I would like at this point to have you look again at what has been received in evidence as Nugent Deposition Exhibit 38.

MR. KEMPF: On this one, your Honor, I am going to be asking some questions that will require a detailed examination.

THE COURT: All right.

[1895] MR. KEMPF. I will provide the Court with a copy of the map.

THE COURT: All right.

MR. KEMPF: I have folded the map, your Honor, to the area which I will be referring to.

THE COURT: All right.

BY MR. KEMPF:

Q Mr. Hopper, the Sun Spot Mine is the mine identified with the number 57 on Nugent Deposition Exhibit 38, is it not?

A I am sorry, I can't see.

THE COURT: You may step down, sir, and look at it.

BY MR. KEMPF:

Q Would you step down, please.

A Yes.

MR. CUSACK: May I join you?

THE COURT: You certainly may.

MR. KEMPF: I will only be having a few questions, your Honor, if the witness may stay here.

THE COURT: He may.

BY MR. KEMPF:

Q The Sun Spot Mine is close to the Chicago, Burlington & Quincy Railroad, is it not?

A Yes, sir.

[1896] Q The town of Industry is not near a railroad, is that correct?

MR. CUSACK: Objection, your Honor, as being beyond the scope of the direct examination. The Government didn't ask anything regarding the Industry Field of this witness.

MR. KEMPF: Your Honor, I can quote Mr. Cusack's representations to the Court the other day why he was being called. I think your Honor will recall that he indicated Mr. Hopper was being called because of the proximity of the one field to the other, and to draw an analogy between the mineability conditions at one, showing that the other was mineable.

MR. CUSACK: Your Honor, I asked the witness no question regarding the Industry Field or the analogy

between the mines, the Sun Spot Mine and the possible future mining of the Industry Field.

MR. KEMPF: Again, your Honor, if Mr. Cusack will stipulate that his testimony provides no insight into whether the Industry Field can be mined or not, I will be happy to withdraw from this line of inquiry.

MR. CUSACK: That can be argued. That is a matter of argument. That is not a matter of evidence.

THE COURT: Well, we had an agreement. The Court [1897] allowed you to call different ones within the scope of that. I will allow this witness to testify subject to your objection.

Q (Read by the Reporter.)

BY THE WITNESS:

A Well, it is some 12 to 15 miles from a railroad.

[1898] BY MR. KEMPF:

Q As a rule of thumb in the industry for estimating the approximate capital cost of constructing a railroad, isn't it the usual practice to base those estimations on a cost of approximately \$30 per foot?

A This is the normal estimation for cost of a railroad of any considerable length.

Q I have no further questions with regard to the map, and you may resume the chair, please.

A (Witness complying.)

Q When did the Sun Spot Mine begin its operations, Mr. Hopper?

A In 1962.

Q What is the approximate annual production of the Sun Spot Mine?

A Oh, it ranges between 800,000 and 900,000 tons per year.

Q So that there have been withdrawn from that field of reserves between 7 and 8 million tons of coal at the present time, is that correct?

A Approximately so.

Q Isn't it a fact that Ayshire controls an additional 12 million tons of coal at that area directly and an additional 8 million tons of coal by location for [1899]

a total remaining reserve of approximately 20 million tons?

A This is the reserves as we presently calculate them, yes, and we are calculating them on the basis of the capability of our present equipment.

Q To the extent that there was a difference in the magnitude of the reserves at the Industry Field in comparison to the Sun Spot Field, that would be an important factor to consider in evaluating whether the Industry Field could be mined at a profit, wouldn't it?

A By Ayshire's standards of evaluation, it would be.

Q The question of whether or not blasting would be required to remove the overburden at the Industry Field would be an important consideration as to whether that field is an economically recoverable field, wouldn't it?

A Yes, it is always an important functional cost to be considered.

Q Differences in the characteristics of the coal between, say, the Sun Spot and the Industry Field, particularly in reference to sulphur content, would be an important consideration to be looked to in evaluating the economic recoverability of the Industry Field, would it not, Mr. Hopper?

[1900] A Yes. All physical characteristics of the coal and the overburden overlying the coal, they are all important and relative to the study.

Q Isn't it true, Mr. Hopper, that each field of reserves must be evaluated in its own right and with reference to the specific conditions, locations, characteristics of the coal and the like that pertain to that field in determining whether or not that field can be recovered at a profit?

A Yes, this is a very important part of it.

When you say "recovered at a profit," the other factor there is the price of coal that you can market it for.

[1901] Q In comparison particularly to the price that the coal can be sold at mines that may be nearby, for instance, that have no capital costs for the construction of a 12 to 15 mile railroad, wouldn't that be an important factor?

A Yes, it definitely would.

Q In fact, would it be your opinion that two fields could be right next to each other, one on side of the road, and the other on the other side of the road, and that each might have its own characteristics and each might have a completely different equation in determining whether it is an economically recoverable field of reserves?

A Yes. Every field of coal is an individual within its own right, and each has its own peculiarities.

MR. KEMPF: Your Honor, I am just about done, if I might confer with my colleague for a moment.

THE COURT: You may.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

THE COURT: Proceed.

BY MR. KEMPF:

Q I am going to ask you two questions, Mr. Hopper, [1902] based on some assumptions. I want you to make the following assumptions:

Assume a coal company operating four mines in Illinois.

Assume that their combined annual production is approximately five to six million tons.

Assume that these are all strip mines.

And assume that the reserves of these mines will be exhausted in, say, from two to fifteen years, depending upon the mine.

Based upon those assumptions, Mr. Hopper, in your professional opinion, wouldn't it be a mistake to force that company to operate independently in the belief that strip reserves were readily available which would enable the company to remain in business in the future at its current levels of production?

A Well, it would be my opinion that they would be in a very poor position to live up to the situation that they had been placed in, because I seriously doubt if they could acquire additional reserves to that extent to maintain that sort of production over a prolonged period of time.



Q Let me ask you a second question based on the same assumptions that I just gave you and one additional assumption, the additional assumption being that the company in question has no experience or expertise in deep mining.

Based on those assumptions, Mr. Hopper, in your professional opinion, wouldn't it be a mistake to force this company to operate independently in the belief that underground reserves were available which could be developed in the short run and that the company in question could, notwithstanding its lack of experience or expertise in deep mining, successfully make a grass-roots entry into deep mining?

MR. CUSACK: Your Honor, the Government objects to the form of the question. He is making an argument, using color words, assumptions not in the record. We object on that basis.

MR. KEMPF: These are all assumptions we have heard from myriad testimony.

THE COURT: He may answer, subject to the objection.

#### BY THE WITNESS:

A Well, I certainly believe that they would be in a very awkward position and probably would have extreme difficulty in obtaining the talent to operate underground operations if they didn't already have them within their own organization.

[1904] MR. KEMPF: I have no further questions, your Honor.

THE COURT: All right. We will take a five-minute recess.

(There was a short recess, after which the following further proceedings were had herein, to-wit:)

. . . . .

[1906]

#### REDIRECT EXAMINATION

BY MR. CUSACK:

. . . . .

**Q** Sir, if I suggest to you that in 1950 Paul Weir Company estimated that there was approximately 304 million tons of strip coal reserves in Illinois available for strip mining and that since 1950, 400 million tons have been strip mined in Illinois, in your opinion would the Paul Weir Company estimates tend to be conservative?

**A** Based on those facts, it had to be.

**Q** Isn't the general reputation of Paul Weir that he is conservative in regard to coal reserves?

**A** I have to—

**MR. CUSACK:** May I rephrase the question, your Honor?

**THE COURT:** You may.

**BY MR. CUSACK:**

**Q** Isn't the fact, sir, that Paul Weir Company has a reputation for being generally conservative in regard to the mineability of coal reserves?

**A** I have to confine my answer to knowing his evaluation of Ayrshire only. I am not familiar enough with his evaluations of other reserves for other companies. But in my considered judgment, in his evaluation of Ayrshire as to mineable reserves and his complete approach, it was rather conservative.

**Q** So, assuming that Ayrshire had not opened the {1907} Thunderbird Mine, would Ayrshire still be interested in opening a new deep mine?

**A** Yes, under certain conditions, I suppose that we would be. There are many problems to be solved in opening underground mines today, and if you had underground reserves that might have a particular attraction to the market, then you would be more likely to develop them. I know that in our studies of what we might expect to do with underground reserves, we are going to make a very long, hard study of them and explore the best talent we can to give us an opinion before we ultimately spend money.

[1908] **Q** In regard to stripping ratios, isn't it true, sir, that as stripping ratios increased in the coal mining business, the coal reserves which were once thought to

be not mineable by the strip method have become economically mineable?

A Historically speaking, this is true because of the development of bigger, better and more expensive stripping tools.

Q If the Industry Field could be mined with equipment moved from a distance of approximately 20 miles, 20 to 30 miles, which equipment was in good repair, was paid for and had fully been depreciated, would this be an important factor in making a mine which was otherwise thought to be marginal a profitable operation?

A Yes. It would be a very important factor, but you give me very little information to base a judgment on, because there are many other factors. I haven't the slightest idea of the capability of a tool you may be talking about.

Q Isn't the cost of new stripping equipment the major cost involved in the opening of a strip mine?

A A reasonably good rule of thumb is that your major stripping tool could very well represent nearly 50 percent of your capital investment.

[1909] Q Mr. Hopper, what do you expect to be the future average overburden at the Sun Spot Mine?

A The future average overburden to be stripped at the Sun Spot Mine with the present equipment we would expect to be in a ratio not greater than 30 to 1 for the average.

[1910] Q Do you expect it to be under 30 to 1 on an average?

A For short periods of time it could be, because when we speak of average overburdens of for instance 30 to 1, then during the given period of measurement there are times when you must be under 30 and times when you are necessarily over 30 to obtain your average.

Q But for the average continued life of this mine you would estimate that it would be approximately 30 to 1?

A Yes.

Q And you expect the Sun Spot Mine to be profitable for its remaining life?

A Yes. We hope for it to be.

Q And in your best estimate, do you think it will be?

A Based on present day trends, I am sure it will be.

Q Sir, did Ayrshire benefit from its experience in regard to the opening and operating of the Thunderbird Mine?

A Yes, we did benefit from this experience.

Q In regard to the question Mr. Kempf asked you in regard to the Kenneth Young property at Mt. Vernon, you do know, do you not, that this property is now being [1911] developed into a strip mine?

A Yes. I know that it is being developed.

Q If a strip mining company was controlled for over 10 years by a corporation also engaged in the deep mining business, do you think it is likely that the strip mining company would make plans to go into underground mining on its own?

A Are you specifically referring to a complete separate entity that would be controlled only by the strip operation?

Q No. I am talking about a strip mining company which is controlled, its ownership, its stock control, is in the hands of another corporation, which is also in the deep mining business in the same area—based on that assumption, do you think that it is likely that the strip mining company would make plans to go into underground mining on its own?

MR. KEMPF: Your Honor, I am not sure I understand the question as it has been modified. Could you restate it, or could we have it read?

THE COURT: Read the question.

Q (Read by the Reporter.)

MR. KEMPF: You refer to "also in the deep mining business", which I do not think your question intended. [1912] I am not sure.

THE COURT: Are you objecting?

MR. KEMPF: Yes. I don't understand the question. At first I thought he had indicated that one was not in the deep mining business. This latter question indicates that the other company is also in the deep mining business, and I am not sure what Mr. Cusack means.

MR. CUSACK: I will rephrase my question.

THE COURT: Rephrase your question.



BY MR. CUSACK:

Q Assuming, Mr. Hopper, a strip mining corporation, which is controlled by a corporation engaged in the deep mining business in the same state—do you think it likely that the strip mining company would make plans to go into underground mining on its own?

A Well, I suppose this would depend largely on corporate set-up, but just in answer to your question, I would certainly think that the strip mining company as such would not go into the underground mining, but the company controlling, since they had underground talent, that they would develop the underground operation rather than the strip portion of it.

[1913] MR. CUSACK: May I have a consultation with my colleagues just for one moment?

THE COURT: You may.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

BY MR. CUSACK:

Q Mr. Hopper, do you believe that in the future your company will consider acquiring strip coal reserves in Schuyler or McDonough Counties, Illinois? I direct your attention, sir, to—

A That is the area west of our Sun Spot operation?

Q Yes, sir.

A Well, it is a possibility.

Q Would your answer be the same, sir, in regard to Ayrshire possibly acquiring strip coal reserves in Brown County, Illinois?

A Excuse me. Where is Brown County?

MR. CUSACK: Mr. Sims, if he may, your Honor, could locate Brown County for us.

THE COURT: All right.

MR. SIMS: (Indicating)

BY MR. CUSACK:

Q (Indicating.)

[1914] A Well, we, Ayrshire, are in a position not to



turn down any strip reserves that are of sufficient numbers that could justify a strip coal mine in the future. We are definitely interested in strip reserves in any sizable amounts.

Q And Ayrshire is continuing to explore for these reserves, is it not?

A We carry on an exploration program completely daily the year-round.

Q Particularly in reference to Illinois?

A In reference to this continent.

Q And you are still prospecting for strip reserves in Illinois, sir?

A Yes.

Q And in Indiana?

A Yes.

Q And in west Kentucky?

A Yes.

MR. CUSACK: Thank you very much, Mr. Hopper.

THE COURT: Is there any recross examination?

MR. KEMPF: I have one question, your Honor.

### RECROSS EXAMINATION

BY MR. KEMPF:

Q Mr. Cusack asked you whether it might be possible to find some strip reserves in McDonough and Schuyler [1915] Counties sometime in the future.

My question is, do you consider it likely that Ayrshire will find a field of reserves which will support an economic mine during the course of the next five to ten years in the area of those counties, which is located on a line through Industry or west of there, and you can look at the map, if you would like, sir, to assist you in making that determination.

A We have done exploration in this general area, and we don't think there are reserves of any sizable amount in the area. We do know, of course, there are small pods of coal, but they certainly aren't large enough for any justification for a coal mine.

. . . .

[1918]

**FRANK NUGENT,**  
called as a witness by the defendants herein, having been previously duly sworn, resumed the stand and was examined and testified further as follows:

**DIRECT EXAMINATION**

(resumed)

**BY MR. HEDLUND:**

**Q** Mr. Nugent, would you explain, please, the background and the function of the corporation and facility known as Rail-To-Water, Incorporated?

**A** It is a device that was built a good many years ago to transfer coal from railroad cars to lake vessels.

**Q** Is it still in operation?

**A** Yes, sir.

**Q** Who owns Rail-To-Water, Inc.?

[1919] **A** Its stock is owned by a large group of coal companies. Those same coal companies own some bonds on the facility.

**Q** Does United Electric utilize the facilities of Rail-To-Water, Inc., to any substantial degree?

**A** No, not directly. I believe that we have taken some coal from the Fidelity Mine and mixed it with coal from southern Illinois in a lake vessel.

**Q** Other than that, over the past two or three years, has United Electric placed any substantial tonnage across that facility?

**A** No, sir.

**Q** Mr. Nugent, reference has been made in the record by the Government to a possible—well, I don't know whether the word was "merger" or "affiliation," but either way, with the Sahara Coal Company.

What if any problems would be involved in such a merger?

**A** Well, I think some very serious problems. Sahara employees, workers that belong to the Progressive Mine Workers Union that are classified by the United Mine Workers Union as being non-union workers.

Q Why would that cause a problem?

A The contract with United Mine Workers Union [1920] provides a penalty of 80 cents a ton, or rather, a payment of 80 cents a ton to the United Mine Workers Welfare Fund for coal not mined by their members and handled by a signator of the United Mine Workers labor contract.

Q So that as I understand it, you would then be faced with a 90-cent per ton penalty because of that?

A Well, I think you would have a problem greater than that. I don't believe the United Mine Workers would be digging any coal while you have that affiliation.

Q Notwithstanding the 90 cents?

A Notwithstanding the 90 cents.

80 cents, it is, not 90 cents.

Q Mr. Nugent, I want to hand you what has been received in evidence as Defendants' Exhibit 79 which is a series of advertisements by General Dynamics and an attached schedule of where those advertisements appear or were to appear.

Are you familiar with that particular advertising program by General Dynamics?

A Yes, sir, I am.

Q There is an ad in there, is there not, that does refer, if not explicitly, but by reference, to the coal operations of United Electric?

A Yes, sir.

[1921] Q Is that the ad in which there is an apple?

A Yes, sir.

Q Could you tell me, if you know, what the purpose of this advertising series was?

A To improve the corporate image.

[1922] Q Was there any intent or desire on the basis of that advertising series to try to sell coal?

A No, sir.

MR. HEDLUND: Does the Government have a copy of its Exhibit 90, and could we give it to the Judge?

MR. CUSACK: I have one. I will be happy to hand it to his Honor.

THE COURT: I don't know what—I think I know what 90 is.

MR. CUSACK: The Common Customer chart, your Honor.

MR. HEDLUND: It is the Common Customer chart, your Honor.

THE COURT: Oh, yes. If you need it, I don't need it. I will just listen.

MR. CUSACK: I will write good notes.

THE COURT: All right.

BY MR. HEDLUND:

Q Mr. Nugent, I hand you what has been received in evidence as Government Exhibit 90 which is a chart entitled "Common Known Customers of United Electric Coal Companies and Freeman Coal Mining Corporation," showing destination points, 1967.

MR. HEDLUND: Your Honor, may I stand by the witness so that I may look onto the document?

[1923] THE COURT: You may.

You may stand, too.

MR. CUSACK: Thank you, your Honor.

BY MR. HEDLUND:

Q Mr. Nugent, directing your attention to the sales in 1967 from the Crown Mine to Caterpillar Tractor Company at its plant in Decatur and from the Cuba, Buckheart Mines to the East Peoria and Montgomery plants of Caterpillar, my question is, would those sales have been competitive or in competition with each other in that year had the two companies been independent?

A No, sir, they would not have been competitive.

Q Could you explain why?

A The coal as shipped to the Decatur plant from the Crown mine is transported by truck. It is a short haul, and service is available 7 days a week. This is a particular advantage. Of course, that could not be done from the Cuba Mine.

Q What about the shipments to East Peoria and Montgomery, could the Crown Mine have competitively reached—

A No, sir. The rate would not be competitive. The freight rate would not be competitive.

**Q** Directing your attention to the shipments in [1924] 1967 from the Cuba, Buckheart Mines to the Peoria facilities of Central Illinois Light Company and the tonnage shown without regard to mine but tonnage from Freeman to the Springfield plant of Central Illinois Light Company, had the two companies been independent, would those shipments have been competitive?

**A** Again, the coal from the Crown Mine to the Springfield plant of Central Illinois Light Company was supplied by truck. The freight rate from the Crown Mine or Springfield area to the Peoria market would not be competitive.

**Q** With respect to the shipments in 1967 from the Crown Mine to the Meredosia plant of Central Illinois Public Service and from the Cuba, Buckheart, Banner Mines of United Electric to the same plant of Central Illinois Public Service, had the two companies been independent, would those shipments have been in competition with each other?

**MR. CUSACK:** Your Honor, I have to interject an objection at this time. Mr. Morris during his direct examination and cross examination went into this most fully. I think it was at least a half a day. I think this is repetitive. I think the testimony is identical to Mr. Morris'.

[1925] On that basis, I object.

**MR. HEDLUND:** Well, I asked Mr. Morris these questions for 1965 and 1966.

Would the Government stipulate that if I go through with Mr. Nugent on similar questions, that his answers for 1967 would be the same?

**MR. CUSACK:** I believe they would be.

**MR. HEDLUND:** You will so stipulate?

**MR. CUSACK:** Yes.

**THE COURT:** All right. Let the record so show, then.

**BY MR. HEDLUND:**

**Q** Just to add one last item with respect to these shipments as discussed by Mr. Morris and as would have been discussed by you pursuant to the stipulation, what percent of the total production of Freeman Coal Mining Corporation is represented by dust?



A Oh, 10 to 11 percent, I would say.

[1926] Q Mr. Nugent, I hand you what has been received in evidence as Defendants' Exhibit 63 which is a chart entitled "The United Electric Coal Companies Committed and Uncommitted Reserves by Mines."

If you will look down about the middle of the page and under the mine heading "Fidelity," there is an item that reads, "Tonnage Committed to Current Negotiations, 10,700,000 Tons." Under the remarks column, it is Northern States Power, Union Electric and NIPSCO.

Has a contract been signed by Northern States Power and United Electric?

A Yes, there has been.

Q Do you know what the term of that contract is?

A It is a ten-year contract with a back-up by Freeman.

Q Do you know the approximate yearly tonnage?

A I think it is about 450,000 to 500,000 tons, in that neighborhood.

Q Has a contract been signed between United Electric and Union Electric?

A No. There is one in the draft stage.

Q Other than the committing to paper of the terms of that contract, in effect, is that contract now [1927] operable?

A Well, I think we are in agreement. It is just a question of some minor details on language.

Q Do you know what the term of that contract is?

A That was a ten-year contract, I believe.

Q Does that contract also have a back-up guarantee by Freeman?

A Yes, sir, it does.

Q Do you know approximately the tonnage?

A I think that, too, was in the neighborhood of 400,000 to 500,000 tons.

Q Could it be 350,000 tons per year?

A It could well be.

Q Has a contract been signed between United Electric and NIPSCO?

A That, too, is in the draft stage.

Q Has an agreement been reached on its essential terms?

A Yes, it has.

Q What is the duration of that contract?

A I think that is four years with an option for one more on the part of the buyer.

Q Approximately what is the annual tonnage on that contract?

[1928] A I think it is about the same.

Q Freeman Coal Mining Corporation has in the past sold coal to the American Maize Products Company, has it not?

A Yes, sir.

Q Is that in Roby, Indiana?

A Yes, sir.

Q It is in the northwest portion of the state?

A Yes, sir.

Q Are you still selling coal to American Maize Products?

A No, sir.

Q Why is that?

A The plant has gone to gas.

Q In the past, has the United Electric Coal Companies sold coal to the Sanitary District of Chicago?

A Yes, sir.

Q Are they doing so at the present time?

A No, sir.

Q Why is that?

A The plant has gone to gas.

Q Mr. Nugent, are you familiar with the Keystone Coal Buyer's Manual?

A Yes, sir.

[1929] Q Could you generally describe what the function of that manual is and who it is sent to?

A Oh, it is a reference book published by McGraw-Hill of practically all of the coal mines in the United States. It goes into some detail.

Q Does it also list the names of people who buy coal?

A Yes, sir.

Q Does it carry advertising?

A Yes, sir.

[1930] Q Are you familiar with the fact that from time to time in the Keystone Coal Buyer's Manual's descriptions of particular mines that estimates are provided of the life expectancy of a particular mine?

A Yes, sir.

Q Could you tell me what validity and what purpose such estimates have?

A Well, I think not too great. Smaller operators and most operators with limited reserves are reluctant to lay before the public the nature of their reserves. I think most of them like to use the word "indefinite."

It isn't of any great value because the utility buyers are much too sophisticated to accept that type of information.

Q Would a utility rely upon that at all?

A Not at all.

Q Would it surprise you to know that the 1963 Coal Buyer's Manual contained an estimate on the life of the Mary Moore Mine in 1963, the Mary Moore Mine of United Electric, of 10 years?

A No, it wouldn't.

Q When did that mine close?

A Oh, I guess maybe five years ago or thereabouts.

Q Would it surprise you that in the 1967 edition [1931] of the Keystone Coal Buyer's Manual, that the life expectancy of the Little Dog Mine is given as 25 years?

A No, sir, it wouldn't surprise me.

Q Did that mine close last year?

A Yes. I think it went bankrupt a year or so ago.

Q Mr. Nugent, do you recall the solicitation for bids by Union Electric Company with respect to its Labadie 3 and 4 units?

A Yes, sir.

Q Do you recall approximately when that was?

A Oh, a year or so ago, two years ago perhaps.

Q Do you recall what they were asking for in terms of duration of the contract and annual tonnage?

A 20 years, I believe, and I think the tonnage was in the neighborhood of about 3 million tons.

Q That would be a total then of 60 million tons?

A Yes, sir.

Q Was United Electric in any position to be able to bid on that contract?

A No, sir.

Q Are you familiar with the solicitation for bids by Union Electric for its Sioux Units 1 and 2?

A Yes, sir.

[1932] Q Could you tell me what they were asking for on those contracts with respect to duration of contract and tonnage involved?

A I think that was 1,500,000 tons for a 20-year period.

MR. CUSACK: Would you please fix the date—

BY THE WITNESS:

A It may have been—

THE COURT: Just one moment.

Yes?

MR. CUSACK: Excuse me. Would you please fix the date on these negotiations for purposes of the record.

[1933] MR. HEDLUND: For Sioux 1 and 2? I believe I have done that for Labadie 3 and 4.

BY MR. HEDLUND:

Q Sioux 1 and 2—when were those solicitations, if you recall?

A Well, I would have to guess, Mr. Hedlund. Probably five years ago.

MR. CUSACK: I object and move to strike on the grounds of guessing. Speculation.

THE COURT: Well, his best estimate. Let's not get technical. We will be here for another two weeks.

MR. CUSACK: Withdraw the objection, your Honor.

THE COURT: All right.

BY MR. HEDLUND:

Q I am sorry, sir, but what was the tonnage and the length of contract?

A 1.5 million tons and I think it was a 10-year contract with perhaps an option for another 10, and that for the purpose of negotiating price at the end of the 10 years.

Q Was United Electric in any position to bid on that contract?

A No, sir.

Q Mr. Nugent, we had some testimony here yesterday [1934] day with respect to the estimates on owning and operating costs of Combustion Engineering's SO<sub>2</sub> device; which the witness, I believe, testified that 90 cents per ton was a reasonable estimate of that cost. Would you tell me whether that would be a significant or insignificant factor in coal's ability to compete?

A Oh, yes, a very significant factor. With the development of nuclear power, that could well be enough to exclude coal.

Q Are you familiar, Mr. Nugent, with the loans made by United Electric to General Dynamics in the fall of 1966?

A Yes.

THE COURT: Will this be extensive?

MR. HEDLUND: I will not conclude with him—

THE COURT: All right. I suggest then we recess until 2:00 o'clock.

(Whereupon, at 12:25 o'clock p.m., the hearing in the above-entitled matter was recessed to 2:00 o'clock, p.m., the same day and date.)

\* \* \* \*

[1936]

AFTERNOON SESSION 2:20 P.M.

\* \* \* \*

FRANK NUGENT,

called as a witness by the defendants herein, having been previously duly sworn, resumed the stand and testified further as follows:

DIRECT EXAMINATION

(continued)

BY MR. HEDLUND:

Q Mr. Nugent, are you familiar with the loans made by United Electric in the late fall of 1966 to General Dynamics?



A Yes.

Q Do you recall whether or not those loans were repaid?

A Yes, sir, they were.

Q Do you recall the interest which those loans bore?

A I don't recall the rate, other than it was higher than we were receiving on the certificates of [1937] deposit that we had been purchasing.

Q Was the money that you had in certificates of deposit—were those redeemed and used for this loan?

A Yes, sir.

Q Mr. Nugent, following the merger of the old United Electric into the new United Electric and upon its becoming a 100 percent, or rather a wholly owned subsidiary of General Dynamics, from that point to this very day were there any capital expenditure requests sent by United Electric to New York for approval that were denied or modified in any extent?

A No, sir.

[1938] Q Were such expenditure requests in fact forwarded to New York?

A Yes, they were.

MR. HEDLUND: Does the Government have Maguire Deposition Exhibit 47?

Your Honor may still have retained a copy of this exhibit as one of those that was claimed to be privileged.

THE COURT: They are in my chambers some place.

BY MR. HEDLUND:

Q Mr. Nugent, I show you what has been received in evidence as Maguire Deposition Exhibit 47, which is a memorandum dated November 1, 1966, from Mr. A. R. Finberg to H. K. Pedersen, the subject of the memorandum being the UEC tender offer.

Have you seen this document before, Mr. Nugent?

A Yes, sir.

Q Directing your attention to the second page of this document, the last sentence of this memorandum says:

"NB: The funds referred to in this paragraph are to come to the bank not from General Dynamics but from the United Electric Coal Companies which

will be the new name of UEC Corporation as of November 7."

[1939] Can you tell me, Mr. Nugent, if you know, why those funds were to come from United Electric rather than from General Dynamics?

A That was for stock that was purchased after the tender offer expired, and that was an obligation of the new UEC Company.

MR. CUSACK: I move to strike on the ground the witness has given a legal conclusion. He is not competent to so testify.

THE COURT: Motion denied.

[1940] BY MR. HEDLUND:

Q Mr. Nugent, I wish to recall your attention to the board of directors meeting of United Electric Coal Companies of May 12, 1961, where the minutes reflect as follows:

"Mr. Hepburn was invited into the meeting, and he and Mr. Nugent made a report on the company's stripping reserves, using maps of Fulton County and Perry County, and showing the company's reserve areas in relation to the reserve areas of other strip companies. It has been determined that the present reserves provide tonnage for continuing and growing production for about 15 to 20 years. After discussion upon motion duly made by Mr. Nugent and duly seconded by Mr. Thorson, it was unanimously resolved that the proper officers of this company, for and on its behalf, be and they are hereby authorized and directed to begin at once an aggressive program to option for purchase and/or lease areas for test drilling in the North Canton and South Buckheart areas in Fulton County and in the area in Perry County and Jackson [1941] County immediately south of the property acquired from Union Collier Company."

My question, Mr. Nugent, is, in light of that and from the time that you came on the board of United Electric

and continuing on to the present time, has United Electric made a vigorous and strenuous effort to acquire additional economically mineable strip coal reserves in Illinois?

A Yes, sir.

MR. CUSACK: Your Honor, the Government objects.

The witness—he read from board of directors minutes that refer to the North Canton Field, the South Buckheart Field and the area at the Fidelity Mine. I think that if he is going to predicate his question on that minute, he must confine his questioning to the statement regarding those fields.

There is nothing in that minute that indicates a vigorous search for coal reserves in the State of Illinois.

THE COURT: All right. Restrict it to that, with the right to ask any question.

[1942] BY MR. HEDLUND:

Q Were the reserve activities of United Electric confined to those areas that I just read to you from the minutes of the May 1961 meeting?

A No, sir, they were not.

Q Mr. Nugent, did you or anybody else connected with United Electric that was at the same time connected with Material Service or Freeman or General Dynamics at any time from 1959 to the present time hold United Electric back in the acquisition of additional economically mineable strip reserves in the State of Illinois?

A No, sir.

Q Are you absolutely certain of that?

A Yes, sir, I am.

Q There has been a considerable amount of evidence in the record, Mr. Nugent, relating to communications and conversations between United Electric personnel and yourself or others at Freeman regarding underground mining possibilities that had come to the attention of United Electric.

With respect to any and all of those, was it ever your intention that if those opportunities proved to be economically feasible, that the profit from those operations

would adhere to Freeman rather than to United [1943] Electric?

A No, sir.

Q In point of fact, did Freeman ever take title to as much as one ton of deep coal that had been brought to its attention by United Electric?

A No, sir.

Q Mr. Nugent, there has been some testimony with respect to a probable or possible or rumored development of a strip mine down near Mt. Vernon, Illinois. Do you know anything about that?

A Yes, sir.

Q Could you tell me, sir, what information you do have with respect to that?

A Well, the TVA, we understand, or rather I understand, has a proposal for the development of what is known as the Belle Rive acreage which is directly east of our No. 6 Mine in southern Illinois. That is tied in with a proposal to develop Alabama acreage.

The Alabama acreage is, I understand, nonunion. The Belle Rive acreage, of course, is yet to be determined.

It would be most unlikely that an entity operating in a non-union operation in Alabama would be operating a union operation in Illinois, and it would be [1944] most difficult to operate a non-union operation in Illinois in close proximity to large mines such as Orient No. 3 and Orient No. 6, owned by the Freeman Coal Mining Corporation.

[1945] Q What is your understanding as to the sulphur content of the coal with respect to the Alabama acreage?

A The Alabama acreage is extremely low in sulphur, much under 1 percent.

Q Much under 1 percent?

A Yes.

Q Do you know whether this proposal is on a both or on an either/or basis?

A They must take both.

Q Mr. Nugent, there has been a considerable amount of testimony in this case and evidence in this case, as recently as this morning, with respect to the so-called Industry Field of United Electric. I know that you have



testified on your deposition with respect to it, but I have one final question.

Since your deposition, so the evidence seems to indicate, coal prices have gone up, there have been some at least temporary shortages of coal, and we have heard other testimony with respect to nuclear energy and the availability of gas, and we have heard some testimony with respect to SO<sub>2</sub> devices.

Q The first question is: Have you had a recent opportunity to look at the actual operating results of the Banner Mine?

A Yes, sir.

[1946] Q You were present, were you not, in the courtroom this morning when Mr. Hopper testified?

A Yes, sir.

Q Based upon your experience of 50 years in the coal industry and your professional judgment, is the Industry Field of United Electric an economically mineable strip field?

A No, sir, it is not. There was a time in the early part of 1960 when I suggested that land be acquired at farm prices, that I felt perhaps this coal might be mined after all of the coal in the Fulton County is exhausted, and that could be some 20 years hence.

United Electric has about a million dollars invested in the Industry Field. With the further development of nuclear energy, my present thinking is that the Industry Field will probably never be mined and that the company had better take its licking now and dispose of the land, at farm prices if need be.

MR. HEDLUND: Thank you, Mr. Nugent. That is all I have, your Honor.

THE COURT: Do you want a short recess before you commence your cross examination?

MR. CUSACK: No, your Honor. I am fairly well prepared up to some of the more recent material.

. . . . .



[1975]

## CROSS EXAMINATION

. . . . .

BY MR. CUSACK:

Q Yes, sir.

A Are you asking me if that is in the 1965 report?

Q Yes, sir.

A No, it is not, in language.

Q Thank you, sir. You testified, Mr. Nugent, in regard to Freeman backing up the coal contracts entered into by United Electric, is that correct, sir?

A Yes, sir.

Q Now could you please explain to the Court, sir, if United Electric and Freeman are not in competition or are not competitors for the sale of coal, how Freeman can act as a back-up for the coal sales of United Electric?

A I think I can. I have a very strong feeling that we are in a temporary bullish market on coal, and we have made a diligent effort to put all of United Electric's remaining reserves under cover. We have contracted for nearly all of the coal that United Electric will produce for the remaining life of its mines.

Now, I feel strongly within the next few years when nuclear power comes into being—and this is further supported by Mr. Corey's testimony of a day or two ago, or yesterday I believe it was—that when that [1976] nuclear power is turned on, this market will not be as it is today, and United Electric needs to have its coal under contract, because it will be near the end of the line. In order to accomplish that, we backed it up with Freeman tonnage, and that is the only way the coal could have been sold.

Q Is it fair to say that General Dynamics is trying to sell United Electric's coal as fast as possible?

A I haven't discussed it with General Dynamics. I consider myself to be an expert on the sale of coal.

Now, it is my opinion, and I haven't needed to take it up with General Dynamics, that that is what should be done in the orderly conduct of United Electric's affairs.

Q Of the 8 million tons of coal produced by Freeman in 1969, approximately what percentage of it was sold to public utility companies?

A About 72 percent.

Q How much of the coal was sold, approximately what percentage, to steel companies for metallurgical purposes?

A 8 percent.

Q And would the remainder be sales to industrial [1977] users?

A General industrial users.

Q Approximately what percentage of the coal produced by United Electric in 1969 was sold to utilities?

A Perhaps a little higher than that.

Q About 75 percent?

A Maybe about that range.

Q Would the remainder of that coal be sold, then, to general industrial users?

A Yes, sir.

Q You testified this afternoon regarding the loans made by United Electric to General Dynamics. Do you recall that?

A Yes, sir.

Q These loans were repaid, sir, after United Electric was merged into General Dynamics, is that correct?

A Yes, sir.

[1978] MR. HEDLUND: I am going to object, your Honor, to the characterization. This has been done before, and I think the record should show. United Electric was not merged into General Dynamics. United Electric was merged into United Electric. It remains a 100 percent subsidiary.

THE COURT: Do you accept that statement for the purpose of the question?

MR. CUSACK: Yes. I submit it is a bit of a quibble.

THE COURT: All right. Let's proceed.

Are you ready to answer?

THE WITNESS: Do I have a question?

THE COURT: Yes.

MR. CUSACK: I believe he answered it.

THE COURT: Did he answer it? All right. Proceed.

BY MR. CUSACK:

Q Sir, this repayment of the \$2 million loan of United Electric to General Dynamics—

A Yes, sir.

Q —was this before or after United Electric declared the \$6 million dividend payable to General Dynamics?

A If you are dealing in days, I don't know. It could be a day or two after or a day before. I don't recall.

[1979] Q It was in that period, though, was it not?

A Yes. This was an ordinary banking function. It was handled by our treasurer.

Q Was it a wire transfer of funds?

A Yes. All of our funds are handled in New York on a daily basis. Our funds are transferred to New York. We draw on New York each day. This eliminates the necessity for carrying balances in hundreds of banks throughout the country. All divisions pool their funds in New York.

Q In regard to the capital appropriation requests of United Electric, isn't it true that you would have to approve of these capital appropriation requests prior to their being sent to New York?

A Yes, sir.

MR. CUSACK: Your Honor, may I borrow back Maguire Deposition Exhibit 47?

BY MR. CUSACK:

Q Mr. Nugent, I hand you Government Exhibit Maguire Deposition Exhibit 47. I ask you, sir, to examine page 2 of that exhibit, the last full paragraph. Have you finished reading it?

A Yes, sir.

Q Isn't it true that in 1966 \$2,672,207 of United Electric's funds were used to pay for the General [1980] Dynamics tender offer for the shares of United Electric?

A I don't think that is true. My recollection is that United Electric after the tender offer had expired spent \$1,300,000 for further acquisition of United Electric's stock.

MR. CUSACK: May I have a moment, please, your Honor?

THE COURT: You may.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

BY MR. CUSACK:

Q You testified, sir, regarding the Belle Rive property at Mt. Vernon.

A Yes, sir.

Q This property is being developed by Merle Kelce, is that correct?

A Well, I don't know that that is entirely correct. He may have a partner.

Q On what testimony or on what evidence do you base your testimony regarding the Belle Rive property?

A On a conversation with TVA. This is not a public offer. This is a negotiated deal, and the deal has not been made public as yet. When it is concluded, [1981] it will be made public. In the meantime, there is a lot of gossip on the street, which apparently you have picked up. That acreage was first called to United Electric's attention in 1928. We went into it again in 1964. In 1964, Mr. Young, who at that time owned the property and who owns it presently, then represented that he had 5 million tons.

Now, some of the gossip on the street doesn't quite fit the facts as they were presented to us by Mr. Young.

[1982] Q How many tons are in the field now, if you know?

A Present rumor is 17 million. It has grown from 5 million to 17 million, and the seam of the coal is one foot eleven inches.

Q What is the overburden?

A It is pretty high. I have forgotten.

Q Isn't it over 75 feet?

A It is over 75 feet, and the quality of the coal has not been definitely determined. The sulphur content varies from 2 percent to 5 percent. We don't know which it is.

Q Is it No. 5 or No. 6 coal?

A It is a bastard seam coal. It has no characterization.

Q In regard to the Industry Field, isn't it a fact that Mr. Hepburn of United Electric believed that the Industry Field would after the exhaustion of the Fulton County strip coal reserves be an economically profitable operation?

MR. HEDLUND: I am going to object, unless Mr. Cusack clarifies his question. Are you talking about all, everybody's Fulton County reserves, all reserves of Fulton County, or United Electric's?

MR. CUSACK: United Electric's.

[1983] THE WITNESS: May I have the question?

THE COURT: Rephrase the question.

BY MR. CUSACK:

Q Isn't it a fact, sir, that Mr. Robert Hepburn of United Electric believed that when United Electric's Fulton County coal reserves were exhausted, the Industry Field could be developed into an economically mineable strip mine?

A Well, I don't know what Mr. Hepburn believed, but whatever he believed, I would not be willing to accept his judgment. He had absolutely no knowledge in the market, nor did Mr. Kolbe. That was the problem with the Industry Field. The field was purchased by people who knew nothing about markets. They had no conception of what they were going to do with the coal after they bought it. That is why they spent a million dollars of the company's money and wasted it.

Q But you testified, had you not, that United Electric was a highly profitable company? Wouldn't that indicate it to you that its management knew something about markets?

A Not at all. Mr. Kolbe frequently had said that he knew nothing about markets, that he depended entirely upon Johnny Morris, that Johnny was a good salesman. I [1984] agreed with that in total. I don't know a better salesman than Mr. Morris. But he was not consulted when the Industry Field was acquired. Had they consulted him, the million dollars would not be down the drain.

Q Isn't it a fact that Mr. Morris—



A Let me say further that the Industry Field is nothing other than a red herring. When we moved into United Electric, I found this asset on the books, of questionable value. Let's assume the management made a mistake. We don't criticize management for the mistake. We criticize management for trying to defend the mistake. [1985] Q Isn't it a fact, sir, that Mr. Morris, while he was a director of United Electric, approved the acquisition of coal reserves at the Industry Field?

A I think not.

Q Isn't it a fact that while you were a director of United Electric you approved the acquisition of coal reserves at Industry Field?

A I did, at farmland prices, on the basis that it was worth no more than that.

Q If it was worth no more than that, why didn't you dispose of it?

A Why didn't we dispose of it? We can't find anybody foolish enough to buy it.

Q Have you ever tried?

A Yes. I would hate, I just wouldn't have the guts to offer the Industry Field to anybody in the coal business. It would be an insult to one's intelligence.

Let me give you an example, if I may—

THE COURT: I think you have answered the question.

MR. CUSACK: May I have five minutes, your Honor? Can we take our break now? I think I can finish up in about 10 minutes with everything.

THE COURT: All right. A five-minute recess.

(There was a short recess, after which the following further proceedings were had herein, to-wit:)

\* \* \*

[1987] THE COURT: Yes.

MR. HEDLUND: The witness certainly did not testify with respect to the competition between these two companies in 1955 to 1959.

MR. CUSACK: Well, would you stipulate that United Electric and Freeman were in competition from 1955 to 1959? Then we can shorten this.

MR. HEDLUND: With respect to some accounts, I think that may have been true. The Buffalo Creek Mine was operating in that time. We have already heard testimony from TVA on this.

THE COURT: Well, do you stipulate to Mr. Cusack's statement or not?

MR. HEDLUND: If he wants to reframe it, I may. Not generally, no I won't stipulate.

THE COURT: Well, then the Court will rule on the question that there has been testimony both from this witness and Mr. Morris that they were not in competition.

He may answer. You may proceed.

BY THE WITNESS:

A The question was, did I discuss prices of Freeman coal and United Electric's coal during that period of time?

BY MR. CUSACK:

Q With Mr. Morris.

[1988] A With Mr. Morris, I can't say that I went back as far as 1954, but during that period, I discussed prices of United Electric coal. The prices Freeman coal were of no concern to Mr. Morris. I was policing the United Electric Sales. Mr. Morris was not policing Freeman sales.

Q Because during this period of time you controlled United Electric?

A We had a substantial stock interest.

Q Please answer by question.

THE COURT: Read the question.

(Question read by the reporter.)

BY THE WITNESS:

A If "control" mean 51 percent of the stock, no we did not. We had four members of a 9-member board in 1959.

BY MR. CUSACK:

Q Prior to 1959, did you consider that you controlled United Electric?

A No, sir.

\* \* \* \*

[1994] BY MR. CUSACK:

Q Is it over \$4.25 a ton?

A Oh, yes.

Q Is it fair to say, Mr. Nugent, and I am not trying to pin you down—would it be in a range from \$4.25 to \$4.50 per ton?

A It would be a little higher than \$4.50. If you want me to make an estimate, I would say it is in the neighborhood of \$5.50 a ton.

Q At the Banner dock?

A Yes, sir.

Q Could you tell us, sir, what the average mine price per ton of coal for the Buckheart and Cuba coal is at the Buckheart-Cuba dock?

A Well, coal is sold on a cost per million basis, as delivered.

Now, Banner coal washed will do about 12,000 BTU per pound as received. Cuba coal will do about 10,600 BTU as delivered. So for all practical purposes at a delivered point they are the same.

Now, the difference between 10,600 and 12,000 is—what? Fourteen hundred BTU? Each hundred BTU is worth about 4 cents. That is the difference between the two coals.

[1995] Q Your answer would be the same in regard to Fidelity in 1969?

A Yes, sir.

Q And there has been an advance, has there not—

A Did you say Fidelity?

Q Yes.

A No. Fidelity relates to the Belleville District field.

Q You say the price is different?

A The price in the Belleville District field, because of the difference in transportation, of course, is different.

Q I am talking about f.o.b. mine.

A The f.o.b. mine price, yes, it would be different than Banner. There is no relation between the Belleville field and the Fulton County field. There is a relation between mines in the Fulton County field.

Q In the Fidelity coal at the Belleville, the Belleville District would be based on per million BTU, is that right?

A That's right. The competition is on that basis.

Q I would now like to discuss with you Defendants' Exhibit 63.

Would you please look at Defendants' [1996] Exhibit 63. Do you anticipate, sir, that any of this coal set out on this schedule will not be consumed because of high sulphur characteristics of the coal?

A Well, that is difficult to answer. If they don't consume it, I don't know what they are going to generate power with. Many of these people that are generating power, there isn't any low sulphur coal available. There isn't any low sulphur oil available. Gas is scarce. I would have to assume that some way is going to be found to provide for these people to burn high sulphur coal to generate power.

\* \* \*

[1999] MR. CUSACK: Could you hand Mr. Nugent a copy of [2000] Defendants' Exhibit 228, please. I know you have one for the Court. You used it on direct.

MR. HEDLUND: I am not arguing with you, Mr. Cusack. I am looking for the document.

MR. CUSACK: I think it may expedite it if I just go over it with the witness.

THE COURT: All right.

MR. HEDLUND: It is Exhibit 229.

MR. CUSACK. I am sorry.

MR. HEDLUND: You need a copy, do you, for the witness, Mr. Cusack?

MR. CUSACK: Yes, please.

MR. HEDLUND: (Handing document to witness.)

BY MR. CUSACK:

Q Mr. Nugent, directing your attention DX-229, the first page, it states that the estimated deep tonnage of the Crown mine is 20,719,000 tons.

A Yes, sir.

Q Is that all high sulphur coal, sir?

A Yes, sir.

Q Orient No. 3 estimated deep tonnage of 33,532,000 tons. Approximately what percentage of that is under

2.5 percent sulphur and what percentage is over 2.5 percent sulphur?

[2001] A All of Orient No. 3 is under 2.5 percent in sulphur.

Q Of the 33,532,000 tons at Orient No. 3, approximately what percentage of those reserves, as set out on the first page of this exhibit, are under 1.5 percent sulphur?

A It is all about at 1.5 percent.

Q In that range?

A 1.4 to 1.5.

Q In regard to Orient No. 4, reserves of 5,315,000 tons, is that high sulphur or low sulphur coal?

A Below 2.5 percent sulphur.

Q Is it above 2 percent?

A In that range.

Q Between 2 to 2.5?

A Yes, sir.

Q Orient No. 5, reserves of 34,035,000, sir, is that high sulphur or low sulphur coal?

A All high sulphur.

Q Above 3.5 percent?

A Yes, sir.

. . . . .

[2005]

# REDIRECT EXAMINATION

BY MR. HEDLUND:

. . . . .

Q Isn't it true that these acquisitions were in the form of an intra-corporate transfer of assets?

A Yes, sir, they were.

Q You referred to the purchase of the Erwin stock. Was that a stock held by J. Erwin Miller?

A Yes, sir.

Q He was a member of the board of United Electric, was he?

A He was at an earlier date, but not, I think, at that time. I am not sure about that, though.

Q With respect to the Defendants' Exhibit 63 on the



committed and uncommitted reserves of United Electric, there is an indication on here that United Electric has a contract with Commonwealth Edison which terminates December 31, 1970.

A Yes, sir.

Q Isn't it true that that portion of the tonnage shipped after July 1st of this year will not be burned in Chicago?

A Commonwealth Edison have so assured us.

Q Isn't it true that any of the other tonnages shown on this schedule that are prohibited from being burned by virtue of local, state or national ordinance, will not be burned at those plants for which this tonnage [2006] had been arranged?

A Yes, sir, that is true.

MR. HEDLUND: I think that is all I have, your Honor.

. . . . .

[2012]

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

No. 67 C 1632

UNITED STATES OF AMERICA, PLAINTIFF

vs.

GENERAL DYNAMICS CORPORATION; THE UNITED ELECTRIC  
COAL COMPANIES; and FREEMAN COAL MINING CORPO-  
RATION, DEFENDANTS

Before HON. EDWIN A. ROBSON, Judge,  
Friday, April 17, 1970,  
10:30 o'clock a.m.

PRESENT:

MR. JOHN THOMAS CUSACK,  
MR. ROBERT L. EISEN,  
MR. RONALD L. FUTTERMAN,  
MR. HUGO SIMS, and  
MR. RICHARD J. BRAUN,  
MR. JOHN SARBAUGH,  
appeared for Plaintiff;

MR. HAMMOND E. CHAFFETZ,  
MR. REUBEN L. HEDLUND,  
MR. DONALD G. KEMPF, JR., and  
MR. RICHARD H. IRVING, III,  
MR. SAMUEL HAUBOLD,  
appeared for Defendants.

ALSO PRESENT:

MR. CHARLES BANE,  
MR. JAMES M. FOLSOM.

• • • •

[2034]

THOMAS L. CRAIG

## DIRECT EXAMINATION

BY MR. EISEN:

Q State your name, please, and your address.

A Thomas L. Craig, 506 Lake Elbert Drive, Winterhaven, Florida.

THE COURT: Will you spell your last name, Mr. Craig?

THE WITNESS: C-r-a-i-g.

THE COURT: All right, the common way.

BY MR. EISEN:

Q By whom are you employed?

A I'm employed by Wellman-Lord, Incorporated.

Q For how long have you been with Wellman-Lord?

A Just over two years.

[2035] Q What is your position at Wellman-Lord, Incorporated?

A I'm manager of pollution control.

Q Could you very briefly state your background, your education and work experience.

A I'm a graduate chemical engineer, 1949. I worked for two years for Shell Oil Company as a technologist in Montreal, Canada. I spent, then, 10 years in various production positions with U. S. Industrial Chemicals in Tuscola, Illinois. I then spent two years with Commonwealth Oil Refining Company of Puerto Rico in their New York office, all of which jobs were in the manufacturing end of the business, or the technical manufacturing end of the business.

I then rejoined United States Industrial Chemicals for a year, and following that I worked for two and a half years for International Minerals and Chemical Company out of Skokie, following which I went into business for myself, and then joined Wellman-Lord.

Q What is the business generally of Wellman-Lord, Incorporated?

A Wellman-Lord is an engineering construction company to the fertilizer chemicals and industrial chemicals industries generally.

[2036] Q Could you explain generally what your duties are with respect to air pollution control.

A Well, I am, as I said, manager of pollution control for Wellman-Lord, and it's a staff position in that I am responsible for the administration of nearly all of our activities in the field of air pollution control. I, for a better term, advise and consent on our technical programs; I supply sales support for our Marketing Department; I do or have done for me economic and technical feasibility studies, for ourselves and for clients as they require it.

Q In the course of your duties, have you become familiar with the research and development of processes designed to remove or recover sulphur oxide emissions from stack gases?

A Yes.

Q Could you tell us briefly what the history of that activity has been.

A Excuse me. Our activity, or generally?

Q Generally.

A Well, over the past five years particularly there has been a number of organizations developing or researching and commercializing processes for the recovery of sulphur oxides, particularly sulphur dioxide, from [2037] stack gases. It started, I would say, about 1966 really in intensity, and the over-all activity has increased rather dramatically since then.

Q Could you give us the reasons for that increase.

A The statutes country-wide on SO<sub>2</sub> levels in the atmosphere have been made just drastically more stringent, let's say, than they had been, and where they have not been made more stringent, let's say, the enforcement of older statutes which had hitherto not been given the time of day, are certainly being pressed more actively.

Q Could you name the companies and organizations which you consider the major institutions or companies engaged in developing and perfecting these devices today?

A Well, I'll start off with Wellman-Lord, and then



there are a number of companies, plus agencies. We have Monsanto, CHEMICO, Combustion Engineering, Universal Oil Products, Consolidation Oil—I am sorry—Consolidation Coal Company, I believe, the Division of Continental Oil, in the United States.

[2038] Q ESSO Research also, or did you mention that?

A No. ESSO Research has announced that they are active in this field.

Q Where is the Universal Oil Products installation, if any? Do they have an installation?

A No, they don't. They have announced an installation.

Q Where is that to be located?

A It's going to be in the greater Chicago area somewhere, and I'm not sure as to the exact location.

Q At a Commonwealth Edison generating station?

A I believe so.

Q Do you know who James R. Garvey is?

A Yes. He's with one of the agencies of the National Coal Association. He's a technical director or—he's got an executive position with one of the coal associations.

Q I would like to read to you, Mr. Garvey—

THE COURT: Craig.

BY MR. EISEN:

Q Mr. Craig. I'm sorry.

I would like to ask you a question, that is, about a statement made by Mr. Garvey to the Joint [2039] Committee on Atomic Energy of the United States Congress, which is contained in Government Exhibit No. 272:

(Reading) "During the past 10 years I have on numerous occasions appeared before committees of Congress and other governmental agencies to testify on the 'state of the art' of control of sulphur oxides. At one such appearance before the New Jersey State Department of Health on October 6, 1967, I said: 'With all the activity by various research organizations, we are confident that an economically attractive approach for the recovery of sulphur oxides from flue gases will be available in the next three years,



give or take a year.' The purpose of my testimony here today is to bring to your attention the fact that this prediction of about two and one-half years ago was correct."

Would you agree with Mr. Garvey's statement as to—  
**THE COURT:** Just a minute. Is there an objection?

**MR. HAUBOLD:** Yes, there is, your Honor. I would object on the ground that this is highly leading. I am not sure who is testifying, Mr. Eisen or Mr. Garvey, [2040] and we would object on the basis that it is leading.

We would also like to point out that this exhibit was just handed to us shortly before the session began this morning, and not within the 24-hour period. I do not believe this has been received in evidence.

**THE COURT:** Is it in evidence or not?

**MR. EISEN:** I do not know if it is in evidence. We supplied the defendants with a copy of this. I do not know whether I mentioned the date of the document. It is February 25, 1970. When copies of the speech were distributed, we supplied the defendants with copies, telling them that we intended to introduce the document. I have not offered the document.

**THE COURT:** When was that?

**MR. EISEN:** We intend to offer it in our rebuttal case, and I think we so indicated to the defense. I know we had indicated it to the defendants.

**MR. HEDLUND:** Yes. That is true, your Honor, but in terms of the 24-hour rule in using documents with a witness, that has not been abided by.

Secondly, if that document was to go into the rebuttal case, it was to go in as a third-party publication, if you will, and not as a document to be used to examine witnesses on.

[2041] **THE COURT:** I did not hear the latter part of your statement.

**MR. HEDLUND:** And not to be used as an exhibit to examine witnesses on.

**MR. EISEN:** I do not understand, your Honor. I was just going to ask him to state whether or not in his opinion that was an accurate prediction, or if he agreed with that statement.

MR. HAUBOLD: Your Honor, it would seem to me that he can ask Mr. Craig for his opinion in various areas, but I think it is improper on direct examination to quote at length an opinion by some third party and then ask the witness whether he agrees with it.

THE COURT: Well, it may go in subject to the objection, so we can proceed. You will have the right to examine it.

Do you understand the question, sir?

THE WITNESS: Yes, your Honor.

THE COURT: All right.

[2042] BY THE WITNESS:

A Could I ask to have it re-read, the part where he said in how many years from 1966 or '67 he had made the statement?

BY MR. EISEN:

Q He says that:

(Reading) "This prediction of about two and one-half years ago was correct."

The statement was made February 25, 1970.

MR. HEDLUND: That is not true.

THE WITNESS: Your Honor, may I ask—really, the conversation has got me puzzled.

THE COURT: Will you restate the question.

BY MR. EISEN:

Q Mr. Garvey was quoting a statement that he had previously made on October 6, 1967 before the State of New Jersey Department of Health, where he said:

(Reading) "With all of the activity by various research organizations, we are confident that an economically attractive approach for recovery of sulphur oxides from flue gases will be available in the next three years, give or take a year. The purpose of my testimony here today is to bring [2043] to your attention the fact that this prediction of about two and one-half years ago was correct."

My question to you was whether you agree with his statement.

A Yes.

Q He goes on to say:

(Reading) "We now have commercial processes available for use, although their economic attractiveness may not be all we desire. The added cost for sulphur oxide control may increase the cost of electricity to residential consumers by at least three and perhaps eight percent."

I would like to ask you, Mr. Craig, whether or not you agree with the cost spread of these control devices as expressed by Mr. Garvey?

MR. HAUBOLD: Your Honor, I object. I do not believe he has laid a foundation as to this witness' knowledge in the area of electrical cost to consumers.

THE COURT: Objection sustained. Lay the foundation.

BY MR. EISEN:

Q Mr. Craig, is it part of your duties to cost out the installation of air pollution control devices, particularly Wellman-Lord's, when used in conjunction [2044] with electrical generating facilities?

A Yes.

Q Would you say that, based on your knowledge and experience, that Mr. Garvey's cost spread is an accurate one?

THE WITNESS: Excuse me, your Honor. May I question counsel?

BY THE WITNESS:

A Was that the three to eight percent?

BY MR. EISEN:

Q Three to eight percent.

A Yes.

Q Are some recovery techniques designed to produce a saleable product?

A Yes.

Q Would that factor affect the increase in cost with the installation of a pollution control device?

A Yes.

Q Would you explain what factors would be involved as far as how that might affect a cost?

A Well, when we project the operating cost which, of course, follows the projection of the capital cost, we project the capital cost, then we project the operating cost for a given generating station. We come [2045] up with a gross operating cost from which we subtract a part of that gross operating cost, which reflects the credit we assign to the sale of the recovered material.

Q I do not know that you have explained as far as—

When you refer to recovered material, what are you referring to?

A Well, for our particular process, it can be SO<sub>2</sub> gas, SO<sub>2</sub> liquid, sulphuric acid or sulphur.

Q Do some processes of desulphurization recover materials or chemicals such as this and others not so?

A Yes.

THE WITNESS: Your Honor, can I give a qualified answer to these questions?

THE COURT: Yes, you may qualify your answers.

[2046] BY THE WITNESS:

A (Continuing.) There are some materials recovered with some of the processes being offered which are less saleable than some others. The sulphuric acid or sulphur is a saleable material. The sulphur-laden limestone, let's say, from the TVA or—I'm sorry—the Bureau of Mines, or the Combustion Engineering process, would not be as saleable. In fact, they may not be saleable at all.

BY MR. EISEN:

Q Is it possible that with one of these recovery processes through the sale of the recovered chemical, that a utility might install such a process without any increased cost to itself?

A I cannot give you a yes or no, but I strongly doubt it.

Q If there was a chemical plant adjacent to an electrical generating station which could use the recovered

product, would this have a substantial effect on the cost, net cost to the utility?

A If the utility and chemical plant were both of a relatively large size, and I'm thinking in terms of something in the neighborhood of 600 or 700 megawatts and above, you could possibly break even.

[2047] Q So that in an instance like that, it would not be at any net cost, additional cost to the utility?

A Yes, but again I must say that this would be a rare happy marriage. It could happen.

THE COURT: Do you know of any such situation at the present time?

THE WITNESS: Again, your Honor, I'm going to have to qualify my statement. I know of some situations, but I know of them in the context of Wellman-Lord. I don't know that the utility and the chemical company would necessarily agree.

BY MR. EISEN:

Q Is there such a situation that exists in the Chicago area?

A Yes.

Q Where is that?

A I have been instructed by my counsel to refrain from answering any questions along either technical confidentiality or business confidentiality without first checking with them.

THE COURT: The Court directs that you answer.

MR. EISEN: Your Honor, I have to apologize. I did not intend to get into this. I will withdraw the question for now.

[2048] THE COURT: All right.

MR. EISEN: I apparently have surprised the witness with the question, so I will withdraw it for now.

MR. HAUBOLD: Your Honor, I move to strike the prior question and answer.

THE COURT: Which one, the Court's question or Mr. Eisen's question?

MR. HAUBOLD: Reluctantly, the Court's question.

THE COURT: It may stand.



BY MR. EISEN:

Q When did Wellman-Lord commence the development of its process?

A In late 1965 or 1966. We did the original literature research on the processes for SO<sub>2</sub> recovery from stack gases which were then available. These were primarily outside of some work which had been done by the Federal agencies of the U. S. Government. These were processes that were available in Germany and in Japan.

We investigated what was available, and it did not look like anything available was going to be attractive, so we decided to make a try at developing a novel process of our own, and put together a conceptual paper study in 1966, which was the beginning of the [2049] Wellman-Lord SO<sub>2</sub> recovery process.

Q Could you describe the process and what it does?

A It's a wet scrubbing regenerative process. We contact the stack gas with an absorbing solution. The absorbing solution removes the sulphur dioxide and the sulphur trioxide, the fly ash, and we then take that sulphur dioxide laden material and regenerate by using some form of energy—in our case it's steam—and drive off the concentrated sulphur dioxide from this rich material, and then return the de-enriched material back into the system to absorb the sulphur dioxide again.

So, it's a recycling, recirculating regenerative system.  
[2050] Q Where has this system been used?

A We used it at a very small pilot plant at the Tampa Electric Gannon Station in Tampa, Florida. We used it at a demonstration plant at the Baltimore Gas & Electric facilities at the Crane Station of Baltimore Gas & Electric, just outside of Baltimore. And that is where we have used it.

Q When did you begin to use it at the Gannon Station? The Gannon Station is at Tampa?

A Right.

Q When was that, sir?

A We did the original work there in 1967.

Q When was it installed at the Baltimore Gas & Electric?

A We started it up early January 1969.

Q Was that on an old Baltimore Gas & Electric installation?

A The Crane Station on which we installed the demonstration plant, I think, was five or six years old.

Q Did you do that yourself, or was that in conjunction with others?

A There were seven parties involved in the founding and the operation of the plant.

Q Other corporations or municipalities? [2051] Governmental bodies?

A Would you like me to name them?

Q That won't be necessary.

A There were four utilities and three private companies.

Q What was your experience at the Baltimore Gas & Electric demonstration plant?

A We verified the chemistry. We proved out the thermodynamics, and we had a number of problems.

Q What were those?

A The biggest single problem was our energy costs that we projected we never met at Baltimore. The actual energy requirements, the steam requirement, the power requirement, was about double. That was the biggest single problem.

The second biggest problem was the inability to keep the plant line because of difficulties primarily with fly ash.

Q What have you done, if anything, to solve these problems?

A We switched from a potassium based system to a sodium based system, where we expect the energy requirements to be more in line with our original projections, and in mid-February and early March did [2052] some additional work at the Tampa Electric Gannon Station to check out a redesign of our pre-scrubber section of the plant for the removal of fly ash.

[2053] Q Do you offer your present process as a commercially feasible process to utilities?

A Yes.

Q Do you make any guarantees?

A Our guarantees are limited to the efficiency of  $\text{SO}_2$ .

removal. We guarantee 90 percent removal of SO<sub>2</sub> in the stack gas, 97½ percent of the SO<sub>2</sub> in the stack gas, and in excess of 85 percent of the—I am sorry. I gave that backwards.

It is in excess of 97½ percent of the fly ash in the stack gas and in excess of 85 percent of the SO<sub>2</sub> in the stack gas.

Q Have you had inquiries or negotiations with any utilities in the State of Illinois with regard to your process?

A We have had inquiries. We have had no negotiations.

Q What companies have you talked to?

A We have spoken to Commonwealth Edison. We have spoken to Central Illinois Lighting & Power, I believe, whose offices are in Peoria.

Q Any others?

A Not that I can be certain of.

Q What systems, in your opinion, are now available [2054] for commercial usage? I believe you have testified that you believe your system is available for commercial uses, is that correct?

A Yes.

Q What other companies are there—

MR. HAUBOLD: Your Honor, I object.

THE COURT: Let him finish his question.

BY MR. EISEN:

Q —which, to your knowledge, are offered it a guaranteed basis?

A The Monsanto process has a guarantee, and as for the others, I cannot speak for their guarantees.

Q When you talk in terms of guarantees, at least so far as Wellman-Lord is concerned, how do these guarantees compare with the guarantees Wellman-Lord offers with regard to its other processes?

MR. HAUBOLD: I object unless Mr. Eisen specifies a little more clearly what other processes he is referring to.

THE COURT: Reframe your question.

[2055] BY MR. EISEN:

Q I am afraid we skipped over something when I was asking about Wellman-Lord.

Could you describe just generally what the business of Wellman-Lord Company is with regard to chemical processes?

A Wellman-Lord is predominantly involved in the agriculture and industrial chemical sectors. We offer sulphuric acid plants, phosphoric acid plants, nitric plants, phosphate chemical plants, phosphate chemical plants as related to the fertilizer chemical industry.

We offer fluoride and fluorine recovery processes. We offer processes for the manufacture of fluosilicic acid, a water fluoridation chemical. We offer process for the production of hydrofluoric acid, which is used in fluorocarbons.

We offer general construction services to industry. We recently have constructed an aircraft assembly plant, and we are presently engaged in doing some work for a major cement company.

Q That will be sufficient for my next question.

Mr. Craig, do you offer reliability guarantees, reliability of operation guarantees, on these processes?

[2056] A We guarantee a production rate. In other words, the client is given a guarantee that the plant will produce so many tons per day and we assure him that the plant will run for so many days per year.

Q Do you give a similar reliability guarantee to the SO<sub>2</sub> removal process?

A That's right. Yes.

Q Do you know whether or not there are any sulphur removal processes presently in operation on utilities in the United States?

A I didn't hear the question.

THE COURT: Read the question.

(Question read by the reporter.)

BY MR. EISEN:

Q That would be utility generating stations.

A I know of the one in the Kansas Power & Light, in Lawrence.

Q Are there any in operation in other countries that you know of?

A Not to my knowledge.

Q What is the Reinluft process?

A It is an older German process which uses an activated char as an absorbent. In other words, as compared to our wet system, it uses a dry system.

[2057] Q Is that in active operation now, that system?

A I don't know. I believe so.

Q Is your system being used abroad.

A No.

Q Did a Japanese company or companies secure a license to use the Wellman-Lord process?

A Yes.

Q What companies are those?

A Mitsubishi Heavy Machinery Company and Sumatoma Chemical Engineering Company jointly licensed the rights to our process.

Q Could you tell us, if you know, what if anything they have done with the Wellman-Lord process?

A They are offering it—period. They have not consummated anything with anyone.

Q Have they carried on further development on their own of your process?

A Yes.

MR. EISEN: No more questions.

THE COURT: Any cross examination?

MR. HAUBOLD: Yes, your Honor.

. . . .

# [2062] CROSS EXAMINATION

BY MR. HAUBOLD:

. . . .

Q So, if I understand you correctly, to increase the reliability of the system, an electric utility, for example, would have to expend considerably more money to install back-up equipment?

A More. Not necessarily considerably more. More money, certainly.



**Q** Do you have any opinion as to what specific quantity guarantees in terms of number of days per year Wellman-Lord would be prepared to make? Let me rephrase the question.

**Would Wellman-Lord be prepared to guarantee continuous operation of your system for 300 days a year?**

**A** Yes.

**Q** I understand, Mr. Craig, that the system that Wellman-Lord devised has been used on only one sized power facility thus far, has it not?

**A** Right.

**Q** At Baltimore Gas & Electric?

**A** Right.

**Q** Isn't it a fact that at the Baltimore Gas & Electric plant that Wellman-Lord was only able to achieve continuous operation at rate for only 20 percent of the time?

**A** That's right.

. . . . .

[2065] **Q** Is it a fact that based on the current projections of Wellman-Lord's in connection with a sodium-based system for a 500 megawatt generating facility, that you now are estimating investment costs of \$15.50 per kilowatt?

**A** Yes.

**Q** And is it not a fact also that you are currently estimating that cost per ton of coal burned in dollars per ton at \$1.60 in the 500 megawatt—

**A** Yes.

**Q** Mr. Craig, can you predict with any reasonable degree of engineering certainty when the Wellman-Lord or any sulphur dioxide process for that matter will be demonstrated to be economically feasible in an electric utility power generating facility?

**A** Can I have that rephrased?

**THE COURT:** Read the question.

**Q.** (Read by the Reported.)

**BY THE WITNESS:**

**A** May I ask, your Honor, what counsel means by "economically feasible."

BY MR. HAUBOLD:

Q Well, in the context of this question shall I say—if I rephrased it and make it “commercially [2066] feasible,” does that assist you?

A Yes.

\* \* \* \*

[2068] Q In terms of reliability, I take it what you are saying is the utilities have to have virtually complete reliability so that they are not faced with the possibility of either polluting the air or turning the lights off?

A No. If you will pardon me, the utility wants to have a device which will permit them neither to pollute the air nor turn the lights out. They don't have to have that.

Q Do you have any opinion whatsoever when the Wellman-Lord process or any other process will become commercially acceptable?

A I would say within five years.

Q Mr. Craig, I would like to ask you about some of the assumptions made in the compilation of some of your cost projections. We have talked about the current cost projections which are in excess of those contained in Defendants' Exhibit 89. If I understand the Wellman-Lord process correctly, you assume there is a byproduct credit. In other words, the cost is diminished because the process can recover some commercially saleable product is that correct?

A Right.

Q You also have assumed, have you not, that a [2069] utility purchasing this Wellman-Lord system would necessarily market this product, would have to sell it to someone, is that correct?

A Yes.

Q Isn't it a fact, Mr. Craig, that the economics of marketing sulphur dioxide or elemental sulphur is highly dependent upon where a plant will be located?

A Yes.

Q Isn't it also a fact that a plant located in a non-urban area which would not be adjacent to convenient transportation to the natural markets for sulphur or

sulphur dioxide would experience higher economic costs in the operation of their sulphur control device?

A Yes.

Q In fact, Mr. Craig, there are situations, which might exist in less urban areas, where it might cost a utility money to dispose of the product. There may be a byproduct deficit rather a credit.

A Yes.

MR. EISEN: Your Honor, I know I left the last question and answer go by, but I think, unless it is limited to our marketing area, I would move that both the question and the answer be stricken as being outside the scope of the complaint.

. . . . .

[2075] Q In fact, Mr. Craig, the difficulties involved in the operation of the Baltimore unit with the potassium system of Wellman-Lord were so great that Wellman-Lord has, in effect, scrapped this system for utility power generation use.

A I will qualify that. Certainly for coals above 1.5 percent sulphur, yes. We recommend sodium system.

Q Is it not a fact, Mr. Craig, that the sodium based Wellman-Lord system which you are now recommending has never been employed on a utility power generation facility comparable in size to the Baltimore Gas & Electric plant?

A Yes, that is a fact.

Q You testified that you received financial help in financing the Baltimore Gas & Electric facility, did you not?

A Right.

Q A number of the contributors to this project were electric utilities, were they not?

A Yes.

Q Have any of the electric utilities which participated in the Baltimore Gas & Electric joint venture agreed to install either the Wellman-Lord [2076] potassium or the sodium system on any of their utility power plants?

A No.

Q In fact, has any electric utility committed itself to

install or employ the Wellman-Lord process, either sodium or potassium, on a power generation facility?

A No.

Q Has the Federal Government granted any money to Wellman-Lord for development of this system?

A No.

Q Did you within the last year, and by "you," I mean Wellman-Lord, submit certain cost figures to the Government in connection with the Stanford Research Institute project?

A We submitted data to Stanford Research.

Q Involving the economics of the system, is it not?

A Yes.

Q You also supplied to them certain information concerning the operation of the system?

A Yes.

\* \* \* \*

#### [2080] REDIRECT EXAMINATION

BY MR. EISEN:

Q Mr. Craig, is there a greater problem in getting rid of pseudo-gypsum than is involved with getting [2081] rid of the radioactive waste materials from nuclear plants?

MR. HAUBOLD: I object unless Mr. Eisen can lay any foundation as to the witness' knowledge in terms of radioactive disposal.

THE COURT: Objection sustained. Reframe your question. Lay the foundation.

BY MR. EISEN:

Q Counsel asked you whether you have had some familiarity with Combustion Engineering's process and the waste material given off by that process, is that correct?

A Yes.

Q Are you familiar with your contacts in the energy field with the radioactive waste products given off by nuclear plants?

A No.

**Q** Do you believe that Wellman-Lord will be able to sell an SO<sub>2</sub> recovery system to any electric utility within the next two to five years?

**A** Yes.

**Q** You referred to a nominal size utility. Could you tell us what you meant by that?

**A** Something from 250 megawatts up.

[2082] **Q** I believe counsel asked you whether Mr. Griswold, who got out this report on behalf of the defendants—

**A** Right.

**Q** (Continuing)—whether he was well renowned.

What is the reputation of John Middleton, the Assistant Secretary of Health, Education & Welfare in charge of pollution?

**A** A very dynamic, progressive individual who looks like he's going to get something done.

**Q** The cost figures represented in Defendants' Exhibit 89, which was shown to you, on page 43 thereof, do you recall that?

**A** Yes.

**Q** Are those cost figures generally within the parameters as stated by Mr. Garvey that I asked you about on direct examination?

**A** Excuse me. Is that—

**MR. HAUBOLD:** I object, your Honor. I think it is very unclear and vague as to what Mr. Eisen is referring to when he says "parameters."

**THE COURT:** If the witness knows what the word means, he may answer in the context in which it is put.

[2083] **BY THE WITNESS:**

**A** Excuse me. Is this referring to Mr. Garvey's three to eight percent?

[2084] **BY MR. EISEN:**

**Q** Three to eight percent increase in cost.

**A** Increase in the cost?

**Q** Yes.

**MR. HAUBOLD:** Your Honor, the statement read by Mr. Eisen concerned a cost of electricity to residential



consumers and I do not believe that the cost figures which have been set forth in Defendants' Exhibit 89 purport to reflect such figures or that they even purport to include or involve cost to residential consumers.

THE COURT: How are they comparable?

MR. EISEN: I would think it is self-evident, your Honor, that the cost would be reflected in the cost of electricity to the consumer. That is what Mr. Garvey is referring to in his speech.

THE COURT: I do not know. There is nothing in the record whether it is to a consumer, to a manufacturer's plant or what, and it is my understanding of the testimony that you have all different types of rates. That is, not of this witness, but the testimony in the record, and I think it should be shown how one is connected with the other, if at all.

How much longer are you going to take?

MR. EISEN: Just about two minutes, your Honor.

[2085] THE COURT: All right. Proceed.

BY MR. EISEN:

Q Mr. Craig, what would be the percentage of cost of fuel—production of electricity, excuse me, to a utility if they were to employ the Wellman-Lord sodium process?

THE WITNESS: I have to qualify this answer, your Honor.

THE COURT: You may.

BY THE WITNESS:

A On the fact that Wellman-Lord projects costs from Wellman-Lord's knowledge of the accounting art, and this does not necessarily mean that it agrees with the utilities art. Generally, the answer to that question as we project the costs is about 10 percent.

BY MR. EISEN:

Q Do you have an opinion on the saleability of sulphur or sulphur compounds as are produced by these systems in the state of Illinois?

A Yes, I have an opinion.

Q What is that?

A It should be reasonably good.

Q Would you say, Mr. Craig, that considering the amount of public opinion that has been marshalled [2086] to solve the environmental and ecological problems which this country and the world is facing today, and the amount of concentrated effort by scientists, technology and governmental bodies, that we will solve the SO<sub>2</sub> emission problem from stack gases of coal generating stations in the next five years?

MR. HAUBOLD: I just object on the fact that it is a highly leading question, your Honor, and sounds like Mr. Eisen is testifying.

THE COURT: It is what?

MR. HAUBOLD: It is a leading question.

THE COURT: Oh, he may answer, if the witness knows.

BY THE WITNESS:

A There is no question about it.

THE COURT: You asked the same question.

MR. EISEN: Thank you, your Honor.

THE COURT: All right. Is there any recross?

MR. HAUBOLD: No further questions, your Honor.

THE COURT: All right. Thank you, sir. You are excused. You can go back to Florida.

(Witness excused.)

MR. CUSACK: Your Honor, I hate to burden the Court with one very slight matter on your instructions.

THE COURT: All right.

. . . .

[2090]

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

No. 67 C 1632

UNITED STATES OF AMERICA, PLAINTIFF

VS.

GENERAL DYNAMICS CORPORATION; THE UNITED ELECTRIC  
COAL COMPANIES; and FREEMAN COAL MINING COR-  
PORATION, DEFENDANTS

Before HON. EDWIN A. ROBSON, Judge,  
Monday, April 20, 1970,  
10:30 o'clock a.m.

PRESENT:

MR. JOHN THOMAS CUSACK,  
MR. HUGO SIMS,

appeared for plaintiff;

MR. HAMMOND E. CHAFFETZ,  
MR. REUBEN L. HEDLUND,  
MR. DONALD G. KEMPF, JR., and  
MR. RICHARD H. IRVING, III,

appeared for defendants;

ALSO PRESENT:

MR. JAMES M. FOLSOM

. . . . .

[2098]

PETER O. STEINER,

called by the defendants herein, having been first duly  
sworn, was examined and testified as follows:

**DIRECT EXAMINATION**

**BY MR. HEDLUND:**

**Q** For the record, would you please state your name and present occupation.

**A** Peter O. Steiner, professor of economics and law at the University of Michigan.

**THE COURT:** Would you spell your last name?

**THE WITNESS:** S-t-e-i-n-e-r.

**THE COURT:** Thank you.

**BY MR. HEDLUND:**

**Q** You are, Professor Steiner, a member of the law faculty of the University of Michigan, is that correct?

**A** Yes, I am.

**Q** Would you just briefly tell me what degrees that you have and from which institutions and which years.

**A** I have a Bachelor of Arts degree from Oberlin College in Oberlin, Ohio in 1943, a Master's degree in economics from Harvard University in 1949, [2099] a Ph.D. degree in economics from Harvard in 1950.

**MR. HEDLUND:** Your Honor, the rest of Professor Steiner's qualifications and background are in evidence already as a deposition exhibit of his deposition. I do want to ask one further question.

**BY MR. HEDLUND:**

**Q** You have, Professor Steiner, have you not, published a textbook on economics with another author?

**A** Yes, I have.

**Q** Could you tell me what the name of that textbook is?

**A** It is called Economics.

**Q** Could you just generally describe the purpose and function of that book?

**A** It is one of a number of books that are provided for the basic first year course in economics.

Our particular book, I have a co-author on this, is designed for what we feel are the more rigorous better first year courses.

Q Could you give me some idea—well, let me ask you first how many editions of this have been published?

A It is now in its second edition. We are at work on the third.

[2100] Q Can you give me some idea of the extent to which this textbook is used on college campuses in the country?

A I just got a publisher's brochure that advertised in the first year of the second edition it had been adopted by 140 colleges or universities.

Q 140?

A Yes.

Q Professor Steiner, since you were asked by the defendants to become involved in this litigation last year, could you give me a rough estimate of the amount of time that you have spent in familiarizing yourself with the record in this case and the documents and in working generally in terms of analyzing the data?

A In elapsed time it has been something over a year. In terms of total hours, if I may give you just a rough guess, I would think between 400 and 500 hours.

Q Could you tell me generally what portions of the record, including the trial, that you have tried to become familiar with?

A I have either attended or read the entire transcript of the trial. I have read all of the [2101] depositions at least once. Some I have read twice.

I have looked at most, though I do not think all, of the deposition exhibits. I have looked at a great deal of the associated matter that applies to interrogatories and so on.

Q What about exhibits that have been introduced here at trial?

A I believe I have looked at all of these. I don't guarantee I remember everything that was in this entire record.

Q As an economist, Professor Steiner, what do you believe generally are the basic steps one must first take in attempting to evaluate the effect of a given merger?

A I think it may be convenient to visualize that evaluation as taking place in three steps.



First is some determination of the relevant market or markets in which the parties to the merger engage.

Second, in forming some judgment as to the intensity of competition in each of those markets and, third, in evaluating the effects on that competition on the intensity of that competition of the merger in question.

[2102] Q Taking the first step, that is the determination of the relevant market or markets in which the merger has taken place, can you describe for me, generally, what is involved in such a determination and exactly what, if I may ask, what your meaning of or what your meaning is when you use the word "market" or "relevant market"?

A Well, I think that when any economist uses the word "competition," they mean competition in a market.

I think there is no magic formula.

May I start by saying, I think that a market is a collection of relevant—or a collection of similar transactions. If you think of any transaction which is in one sense unique, it has a buyer, it has a seller, it has a well-defined good or service that is exchanged, it has a price, it often has a contract of sale and so on.

A market is usually an attempt to delineate a collection of transactions that are sufficiently similar either in their buyers or in their sellers—or in the intersection of the set of buyers and sellers—that it makes more sense and understanding in what determines that transaction to consider them collectively than to consider them separately; so that my feeling is one looks at the facts of a particular set of transactions, looks at the [2103] purpose one has in mind and attempts to decide which collection of all possible transactions are best included and which are best excluded.

It is always a question of defining boundary lines that includes some transactions and exclude others.

Q Is it not true that in a sense all such transactions or all transactions are unique?

A Sure, all transactions are unique but some are sufficiently similar that there is more than insight in looking at them as a group than in looking at them separately.

Q In looking at them as a group is it necessary to take a look at or to evaluate the time or the place of the transaction?

A I find it very difficult to discuss what is a useful set of transactions without defining more precisely the purpose one has in mind. Once one has defined a set of transactions that appear to be the sensible one for a particular purpose, they usually have a geographic area, and a period of time that is part of that definition. But it is in a sense the set of like transactions that determines the area and the time rather than the other way around, and that in turn seems to me is determined by what it is you are looking for, what [2104] question you are asking and that you then structure the market to best answer the particular question.

[2105] Q How does one determine as an economist the extent of a market, or, if you will, its geographic reach?

A Well, sometimes that is very easy and sometimes it is very hard. It may well be that one has a defined set of transactions that appear to be the ones that one is concerned with, and it then appears that the, let us say, buyers in that set of transactions are in a well-defined, narrowly-defined area. It may well be that the sellers in that group of transactions are confined in a well-defined area, and it may indeed be that both buyers and sellers are in a particular area or areas. Thus, one cannot, it seems to me draw lines around the market or around the set of transactions in terms of locations of buyers or in terms of the locations of sellers.

Alternatively, sometimes one talks of markets in terms of where the transaction takes place and simply the place of transacting, or the place of delivery as distinct from the home offices of either buyers or sellers.

Q To what extent can the political boundaries of a state actually define the extent of a market?

A Well, I think when one draws boundaries [2106] around an economically meaningful set of transactions, it would be unlikely that a purely political boundary would encompass them although I suppose there are some cases where that might be so.

I suppose that where there are state laws that strongly affected the transportation of this commodity, it might well be that a state boundary in that reach of the law or that reach of taxes, something of this kind, define them.

It might be that in approximating a market one would describe it most sensibly in terms of the state or group of states or subdivision of a state.

I suppose what I am saying here is that the set of transactions have to be described some way and it's frequently possible to describe it in terms of geographic areas.

Other times—sometimes these would be political subdivisions—other times it might be such things as a river valley, or along a railroad line which might very well cross state lines; something of that kind.

[2107] Q Will the fact that all the buyers buying a particular product are located in one state, and all the suppliers selling that product are located in one state, would this in and of itself indicate that there is a state market for that product?

A If I understand what you are saying, you are saying that all suppliers to this group of sellers are within that state and we are dealing with a group of customers who are entirely within the state.

In that case, it would seem to me clear that the market, if those were the facts, would be no larger than the state.

I think I would want to inquire further, it might well be that there were smaller markets; for example, if all the buyers in the north half of the state purchased from a group of—one group of suppliers—all the purchasers in the southern half of the state purchased from a quite distinct set of suppliers, it would seem to me it would make more sense to speak of the two separate markets in that hypothetical case.

Q In changing the hypothetical a little bit differently, if all of the buyers in a particular state buy most of the products from the suppliers in that state, and if the suppliers in that state sell most or a [2108] substantial portion of their production to buyers in that state, would that alone indicate that the state is an economically meaningful market?

A I don't think that would alone indicate it. It would certainly push us in that direction. I say that because,

again, there is some possibility that a subdivision—that there would be many markets contained within that area.

It might also be, and I would be interested in whether—in what you mean by most and how influential is the supply that comes in from outside.

Oh, I think in terms of the competitive influence, perhaps, of this supply that comes in from outside, and it might well be that the barest price rise from suppliers within the state would lead that percentage that was coming from outside to expand greatly.

That would seem to me to indicate that the relevant suppliers might well be more widely distributed than the state as well as possibly being less widely distributed in the sense of coming only from a particular portion of the state.

Q Now, I mentioned the word “product” without defining it in the hypothetical that I gave you.

Would it be necessary to know to what extent [2109] that product was interchangeable or could be displaced by a different type of product, but one that could be used for the same purpose.

A Yes, indeed. I assumed there that we previously defined the relevant product but it seems to be quite clear that a particular product defined by certain characteristics might itself either be too broad or too narrow.

Oh, I think in the coal industry with which we are concerned it seems clear that, for example, metallurgical coal may usefully be distinguished from steam coal in terms of lots of factors, including its chemical properties and its price. It seems, furthermore, that it may well be from the point of view of many purchasers that other products are used interchangeably or used as substitutes for that product and from the point of view of those users, for example, gas or nuclear energy may be an alternative source of supply. Thus I would think in an economic sense, in evaluating the market for these certain kinds of purposes, for the extent of competition, one has to inquire quite closely as to whether a particular commodity is a product around which one wishes to define the market, the economic market, and to evaluate the effect of competition.

[2110] Q The second step that you mentioned that must be taken in evaluating the effects of any given merger was an evaluation of the intensity of competition in the market in which the merger takes place.

Could you tell me how as an economist one attempts to make that evaluation?

A Well, we have no magic barometer, we have no thermometer, something that simply tells us whether competition is intense or not. We've worried a great deal about it over the years. We tend to say we look for indicia of competitiveness and we look at these often, which sometimes is useful to try and define three different kinds of indications or aspects of the problem of competition; some of which are described as structural things such as the number and size distribution of the sellers; the number and size distribution of buyers; the ease with which entry can occur into the industry or exit can occur; the nature of the product, and that sort of thing.

Secondly—

Q May I interrupt you there?

A Sure.

Q You mentioned the nature of the buyers, I'm sorry, the nature of the product. Would the nature of [2111] the buyers be important in terms of the structural aspects?

A Surely. Lots of aspects of this are, really, characteristics of buyers, characteristics of sellers, characteristics of products. All are important.

For example, one would expect—there is good theory to suggest that well-informed buyers may behave quite differently than poorly-informed buyers—that buyers who make purchasing a major executive responsibility may in effect behave differently than where it is a relatively low level of responsibility, where repetitive major purchases are made can be distinguished from incidental single purchases, all of these characteristics are part of the web of structural conditions that perhaps economists have used at one time or another to attempt to understand market behavior, market performance which are the second, and third—or the third and second—things I want to talk about.



**Q** Would you, you mentioned market behavior and market performance. What do you mean by market behavior and how that perhaps can be determined?

**A** Well, market behavior means the way in which the actors in a market—the sellers and the buyers [2112] behave, really. At one extreme, take something that is familiar to all lawyers, collusive behavior—is taken to be by itself a very strong indication of the absence of competition.

The word competition itself, I think, can be used as a behavioral rather than a structural word, a form of striving, a sense of competition, one against the other; and then the whole pattern then of interrelation, of behavioral patterns among sellers, among buyers, or the way buyers negotiate with sellers is part of the behavioral parameters of a particular market.

**Q** The third factor I think you mentioned is performance.

I would like to ask you what you mean by that and what one does to determine the performance in the particular market?

**A** Well, again, economists have certain ideals, certain models of how a well functioning market works in terms of achieving low levels of cost of production, trying to produce at something like minimal obtainable cost, and trying to argue that in a well functioning market, price will be forced by competition down toward the levels of cost, that there will be continuous [2113] downward pressures on price and on cost; secondly, as a behavioral—excuse me—as a performance aspect is really the degree of responsiveness of a market. Markets, and industries, are faced by changes that get imposed upon them, and a well functioning market responds quickly to the challenges put upon it.

If there is an increase in demand, it responds with an expansion of capacity. If there is a change in the nature of demand it adapts quickly to this. In a sense a monopolistic market is often regarded as retarding, holding back those changes for the purpose of the monopolist's profit.

This whole question of progressiveness—it's sometimes called by economists—adaptability, the rapidity, the ef-

fectiveness with which they adapt is a measure of performance, so that—well, to summarize it in a couple of words—economists often look to the nature of price, to the nature of quality of product, to the rate of innovation, to the rapidity of adjustment to change, as some of the kinds of things you expect a market to do, and therefore you attempt to judge how well a market has performed by comparing these things to what might have been reasonably expected of it.

[2114] These things are hard to measure clearly. One doesn't know always how a market would have performed under different circumstances, so one is asking a question of comparing how it did perform against a notion of how it might reasonably have been expected to perform.

[2115] Q You have now discussed three dimensions or aspects of the step of evaluating the intensity of competition in the market and you mentioned structural aspects, the behavioral and performance aspects.

Is any single one of these the governing dimension in terms of making the evaluation of the intensity of competition existing in a market?

A Well, I think if we could measure them all we would say we cared about performance. Performance is tricky to measure. It's because we think—care about it—that we hope as economists and as lawyers—I think you hope to find links between behavior and performance because it's easier to measure behavior, to observe behavior or to measure structure than it is to make a final evaluation.

It seems to me, for example, that the very clear legal dislike of price fixing is based on the presumption that this form of behavior so inherently leads to poor performance that we are prepared to regard that as evidence of probable poor performance and not inquire further.

In much the same way we tend to regard monopoly as a structural kind of control in the hands of one or a very small number of sellers, is so inherently [2116] likely to lead to poor performance that without more we will regard that as adverse and it certainly is a signal that leads us to look beyond.

If I may go further than that in my answer, it is, I think, at one's hazard except in these extremes and well defined cases, one's hazard takes structural indications alone as a measure of what performance will be. Economists, I think, hope that there will prove to be some easy classification of markets; you can in such and such a set of cases, it is inherently likely to prove anticompetitive and therefore we need not look further.

Now, just as in the law there are certain extremes where we are willing to use per se rules, so I think economists say at certain extremes they are satisfied but for the great bulk of business behavior it's usually necessary to inquire further, and it seems to me that is perhaps why one has major antitrust suits because it is necessary to inquire as to what the facts are.

Q I gather then what you are saying is that the data with respect to concentration, with respect to the size of sellers or indeed the size of buyers, that this is not alone enough to determine what the level of [2117] competition is in any given market?

A Well, that's right. I think that I would say that if we have a properly defined market, one in which we are in effect evaluating, knowing things like market shares and concentration ratios is a great help and it may be that they are at one extreme or the other—either so very small market shares that we say there is inherently no reason to suspect on the structural side any adverse effect (although conceivably there still then could be a set of behavioral activities of the sellers that would lead us to look with suspicion.)

Or, on the other hand, it might be so high that one would say without more one is prepared to regard that as so probably anticompetitive that it's not worth a great deal of time and energy in determination.

But frequently, I really want to say two things here—frequently one is not at either one of those extremes, one is at an area where one wants to look further; secondly, and a point that I think is terribly important that a concentration ratio is never any better than the delineation of the market in which it is measured or a market share, and thus to evaluate a concentration ratio you

have to be satisfied that it is measured in a proper economic market.

[2118] Thus, it seems to me, when one is taking concentration as a proxy for degree of competition, if that is so, one must worry about how good a proxy it is, and, second, whether it's measured in a relevant market.

I think both of those things lead me to want to look beyond the concentration although not denying that concentration is of substantial importance, that we have many statistical associations between concentration and market behavior and between concentration and market performance.

[2119] Q For purposes of illustration could you give me an example of where the concentration statistics would compel you to believe that the market was not competitive but where this becomes misleading because of the, say, unrealistic definition of that market?

A Well, let me give you an example based slightly on my own experience and a few blocks away. I think some years ago there was a merger of the Continental-Illinois National Bank and the City National Bank, two banks out of the 15,000 in the United States, two banks out of the two in the 200 South block of LaSalle Street.

If one regarded that merger alternatively as being a change in the number of banks in the United States from 15,000 to 14,999, one might say that is a trivial change in concentration and say the effect was de minimis.

It seems to me that would be unwarranted. It was not true all of those banks were, in the real sense, in the same market.

By the same token, you might have regarded that as two banks on the 200 block of South LaSalle Street and said the effect of that was to go from two sellers to one seller and see the creation of [2120] a monopoly. It seems to me at the other extreme that was equally unwarranted.

There are alternative definitions. Whether it was the Chicago Metropolitan area or a wider area that was the relevant market had to be determined before one could compute market shares, concentration ratios and make sense of them. In that absurdity of extremes there, you

can always draw a circle around a seller in such a way that he is a monopoly.

You can always define a group of buyers for which he is the only seller.

[2121] One can create a statistical monopoly without having created an economic reality.

It seems to me the economic realities of who the suppliers are and the alternative suppliers are what control when we determine how intensive competition is.

Q Professor Steiner, if you will, I would like to get down to some of the facts in this case.

A I thought you might.

Q You have become familiar, have you not, with the Government exhibits in this case, relating to the number of producers in Illinois in the period of 1957 to 1967, have you?

A Yes.

Q And you have become familiar with the Government exhibits with respect to, not the number of companies, but the number of "leading companies" and their production share in the three-state area of Illinois, Indiana and west Kentucky, have you?

A Yes, I have.

Q You are familiar, are you not, with the Government exhibits which relate to concentration trends in both Illinois and the three-state area, are you not?

A The tables that show the share of the top two, [2122] the top four, the top ten, yes, I am.

Q And you are familiar as well, are you, Professor Steiner, with the tables prepared by Dr. Bruce Netschert and his report which is in evidence?

A Yes, I am.

Q And you have read the deposition of Dr. Netschert, have you?

A Yes.

Q And the deposition and report of Dr. Gerber?

A Yes.

Q Looking directly at the Government exhibits which I have mentioned, they indicate that in the period of 1957 to 1967, and I don't mean to characterize them as they say what they say, but for the purposes of getting



this discussion going, they indicate that in this period of 1957 to 1967 for Illinois there has been a substantial decline in the number of Illinois coal producers.

[2123] There is other evidence to indicate that in that same period of time there has been a substantial decline in the number of mines, coal mines in Illinois.

Going to the three-state area, the evidence indicates that there has been an increase in the size of the "leading companies" which has also been true for Illinois, and we see particularly from Dr. Netschert's tables that there has nationally been an increase, a dramatic increase in the size of mines.

I want to now ask you, first, what are the possible explanations for the decline that we have seen in the coal industry in the number of companies, the number of mines and the increased size of the surviving companies, if you will, and the surviving mines?

A I think you said at the—

MR. CUSACK: Your Honor, may I pose an objection here for the record?

THE COURT: You may.

MR. CUSACK: The Supreme Court of the United States in the case of United States against Pabst Brewing Company, handed down in June of 1966, stated very clearly that the cause of concentration and attrition [2124] and cause for mergers, whatever cause, that the key thing was whether or not there was a trend of concentration and attrition in the industry regardless of the cause; and on this basis I object to this line of questioning.

THE COURT: He may answer subject to the objection. The objection may be noted.

MR. CUSACK: Thank you, your Honor.

BY MR. HEDLUND:

Q Do you have the question, Professor Steiner?

A Yes. I think in the first part of your question you spoke of the decline of the coal industry. I am not sure the record does show that. You are talking—

THE COURT: Speaking of the terms in decline of numbers.

## BY THE WITNESS:

A (Continuing.) If I understand the question, you are asking me are there various possible explanations that one might advance before one looks at the facts; and I am always suspicious of people who say there are three possible reasons for something because there may easily be more, but let me suggest at least three different kinds of explanations that might, before one [2125] looks at the facts, be offered.

One is changes in industry structure of a magnitude of a really dramatic nature of what we have observed here in a relatively short time which might be due to changes in conditions of demand for the product in question and dramatic changes in demand often require, compel and thus, if the industry is responsive, lead to a series of adaptations which lead to changes in the structural characteristics of the market. There are historical examples of that.

[2126] A second kind of explanation might come from the supply side, the technological side. You may have a major innovation, a major set of new techniques or new products that indeed so restructure the industry producing these and, indeed, a series of industries that they in turn supply, that they may induce structural changes in one or more instances.

Third, is the kind of explanation which perhaps Mr. Cusack was urging on us a moment ago. The third explanation would not put primary weight on either an autonomous shift in demand that led to these changes, nor a change in the supply conditions that led to them but, rather, that it was due to the behavior of existing firms who perhaps, by virtue of a series of mergers, decreased the number of sellers, and it was thus an internal behavioral response here not well explained by outside forces affecting either demand or supply.

MR. CUSACK: Your Honor, in regard to Professor Steiner's comment on my previous objection, I would like to point out that I was not referring to Mr. Cusack's ideas on this question. I was referring to the Supreme Court's idea which is very clear and set out in the Pabst case.

THE COURT: All right. That may be noted.

[2127] MR. CUSACK: Thank you, your Honor.

THE COURT: Proceed.

BY MR. HEDLUND:

Q Based on the record in this case, of the three possible explanations that you have suggested for the decline in the number of companies, the number of mines and the increased size of those surviving, which of these explanations do you feel best explains the reasons for what has happened?

A I think the record seems overwhelmingly clear to me that we have here a demand-induced set of structural changes, changes in the nature of demands for coal both in terms of the decline of the railroad market to virtually nothing, the disappearance or the virtual disappearance or the near disappearance of the home heating market, to the tendency for increasing substitution of gas for coal in the industrial market, but at the same time the substantial rise in the demand by the electrical utilities for coal has itself been sufficient to explain everything that has occurred.

I think that there are really two phenomena, not one, in the question you asked me. One is the disappearance of a very large number of substantially small producers. [2128] The other is a growth in size, in mine size and, to some extent, in company size of the quite large producers.

I think those are not the same phenomena, but I think they are both related to these demand conditions. I would not say there have not been technological innovations, cost changes, supply changes.

There have been. There have been in the techniques of mining, as the productivity increases in both the efficiency of the production of coal and its distribution, but those seem to me, too, to be responses to following on the kind of changes in the demands for coal that have made it possible for coal producers to produce in larger quantities for a rather different market.

Therefore, there have been mergers in this industry and some of those require explanation outside of this

framework, but it seems to me the basic statistics, the dominant statistical picture is one that can be readily understood in changes of the terms of the changes of demand and cannot be understood without taking into account the changes in demand.

THE COURT: Would this be a good opportunity to take a recess?

[2129] MR. HEDLUND: Yes, your Honor.

(There was a short recess, after which the following further proceedings were had herein, to-wit:)

[2130] THE CLERK: The case on trial.

THE COURT: Are you ready to proceed?

MR. HEDLUND: Yes, we are.

THE COURT: You may proceed.

BY MR. HEDLUND:

Q I gather then, Professor Steiner, that you do not believe that this change, if I might use the shorthand word of structure, has been provoked to any measurable extent by a change in technology, the second possible explanation which you suggest?

A That is right; there have been changes but they have not been the provoking changes, to use your phrase.

Q By way of example, could you refer to another industry in which the change in technology has provoked the change in structure?

A Well, there are a great many examples. I think we are in an important sense today undergoing a series of changes in structure provoked by what can be called the electronic revolution with respect to computers and computerization, automation.

In the automobile industry, the assembly line, which was introduced in the Model T Ford, clearly basically transformed that industry in its day.

[2131] In the textile industry also, I think the synthetics, the chemicals, the introduction of chemical fibers transforms most of the textile industries and much of the market structure in those industries.

Going even further back, there is the impact of the open hearth furnace on steel production and so on.

It seems to me our history is replete with examples of where a major innovation or a series of smaller innovations have gotten to the point where they have simply generated important structural changes. My feeling is that the coal industry has not been subject to that kind of a change over this period. The changes have come from the things I mentioned a few minutes ago.

[2132] Q There have, however, have there not been, Professor Steiner, changes in technology in the coal industry?

A Yes. I think that one of the things that has happened in response to this shift of the market to very largely a market, a demand for coal by electrical utilities, has led to markets that can be supplied by large scale production on unit trains, from large mines, and this has made, in part, necessary and, in part possible, the introduction of machinery that is well suited to large-scale production.

I think there have also been in this industry substantial rises in labor cost and, therefore, a substantial, a very dramatic, as it shows in the data, substitution of capital for labor in the production of coal.

As you see the output per man in coal has at least tripled over the last 20 years and this suggests there has been capital substitution in both the mining and the transportation, the handling of it.

I think these have been very important changes, but they seem to me not to have been the innovating changes that led to the other changes.

Q Returning to the third possible explanation [2133] for this change in structure, I gather that you do not believe that the acquisitions or mergers can be put forth as an explanation for this change?

A Again, if I might come separately to the two questions that I tried to distinguish, I see no evidence whatever in any of these statistics that the disappearance of the small producers is due to merger. We do not have a great deal of data about what has happened to what was 127 companies that reduced to 27, if that is the number, the approximate number of the companies under 300,000 in Illinois between 1947 and 1967, but I find—



Q Did you mean 1947? 1957 and 1967.

A Excuse me. I meant 1957 to 1967, over that 10-year period. I find of those small companies which are not identified, very few of them in terms of the production appearing as mergers in any of the mergers that are listed in the lists that I have seen provided by the Government.

I think there have been mergers. I think, as I have looked at those, particularly in this period since 1957, 1959, and 1960, they do not account for very much of the change in the size in Illinois, at least where I have looked closely, of the large producers except for [2134] Peabody.

Peabody clearly has increased its production and its market share quite dramatically in terms of the series of mergers. I think if one effectuates, if one regards the United-Freeman merger as having been affected for control purposes in 1959, in October of 1959, it seems to me the sensible way to look at it, as an economist, I find very few mergers in Illinois of Illinois producers since 1959, except those that Peabody has engaged in.

I wouldn't say there have been none because I think there probably have been, but I remember very few. It is quite clear that what has happened, leaving the disappearance of the small sellers, is not a major phenomena as far as I can see.

These companies, I believe, were producing 25, 50, up to 100,000 tons of coal. Those companies have found their market disappearing, and many of them seem to just have disappeared.

Whether they have failed or whether they have exhausted their mines and quite quietly disappeared, I don't really know.

The large companies, Peabody aside, seem to have grown largely without merger over this period. In [2135] any case, the basic changes in the phenomenon do not seem to be merger-induced.

May I say one further thing about a purely statistical phenomenon. I think there are two phenomena in terms of growth of size, one of which is real and one is purely statistical.

[2136] We start back in 1957 where we have something over 125, perhaps it is 145 coal companies in Illinois. We then have perhaps 80 or 100 of these companies from the small end disappearing.

If nothing else had changed, that mere disappearance of the small companies would increase the average production of the surviving companies and the average production of the surviving mines.

That is this statistical phenomenon would result from the lopping off, if I may use that phrase, of the smaller companies.

There has been, in addition, a growth in the size, in the production in both the share of the production and the production per company and per mine of the larger companies that I think has been real as distinct from statistical.

I think the data that we have shows that larger mines are being built and thus companies having the same number of mines find their production from those mines in total production increasing. There has additionally, of course, been, and this is particularly evident in statistics on Peabody over this ten-year period, there have been a substantial series of acquisitions of substantial companies which [2137] increased Peabody's market share and thus also the share of the top group of companies if it includes Peabody.

It is there, it seems to me, only there that I find the merger explanation of very persuasive force.

BY MR. HEDLUND:

Q I intend to get back to the specifics of what you have just testified to, but I want to go on to a different subject right now, if I may. With respect to these statistics that have been received in evidence as Government exhibits relating to structure and relating to the production shares of each of these companies, I would like to ask your opinion with respect to whether or not these exhibits show what they purport to show or, to put it another way, are they valid or are they misleading?

A I think in many ways they do not show what I would like to see and, thus, I feel that they are misleading. If they purport to show the relevant measure

of concentration in the proper economic market or the properly defined market, I think they are distinctly misleading for a number of reasons.

Q Would you give me those?

[2138] A I will try to mention some of them. I think for the reasons we can go into this in more detail when you want, but I don't think that Illinois is a proper economic market in the sense in which I would use that word.

I do not think the three-state area of Illinois, Indiana and west Kentucky is a market.

I think that these figures err in lumping, as if they are the same products, metallurgical coal and steam coal. All the evidence I have heard in this case suggests that those kinds of coal are so different in terms of who uses them and their cost and how they are used and the purposes for which they are used, that they should be separated.

I think these figures are misleading if they purport to show the extent of inter-product competition. It seems to me one of the things that one cannot escape in listening to the witnesses in this case, reading the depositions and hearing the body of the testimony is the tremendous importance of inter-fuel competition in the market, at least for the electrical utilities and, indeed, in the market for the others, the loss of the markets to the railroads [2139] and home heating where there is the testimony to the inter-fuel competition over the ten or twenty-year period that most of our data covers.

I think the data may be misleading in that they lump all sales to all buyers without distinctions among them. Yet, it seems to me that quite apart from the metallurgical coal, the electric utility market, if I may speak of it that way, or a group of buyers who probably should be separated and treated separately from other buyers, it seems to me they have different requirements.

[2140] I think in other ways one can keep going on. I think that particularly having heard much of the testimony in this record, I am persuaded that coal is not a homogeneous commodity, even steam coal, that things like sulphur content, things like ash, moisture content,

fusion properties, that these things make it necessary to look, perhaps, with some care to see in which instances, in which cases one has to distinguish.

I think that again, or, next, that it is not clear that where commodities are sold on long-term contracts, where production this year is likely to represent in very large extent production committed on a contract signed some years ago, that production is the proper determination, if you like, of a firm's activity in judging, in evaluating the competition now or the future competition.

It may well be that one has to look at the capability of a producer to enter into another contract.

If, as I believe the record shows, this is a futures market, in the sense that what is transacted is a stream of coal deliveries, it is the potential, and I think the record in this case suggests the actuality of production statistics being misleading unless one pays [2141] attention to available uncommitted reserves.

I don't suppose I have covered all the things that disturb me about those data, but those are at least a few of them.

Let me say one word further. May I?

THE COURT: You may.

BY THE WITNESS:

A (Continuing) I don't by that mean to say that I think that approximate statistics, that this is not a counsel of perfection.

[2142] My criticism of these statistics is not that I think they are less than fully perfect. It is that I think they are less good than they should be.

Many of these things I feel critical about should and can, on the basis of this record, may be looked at and we can find a more refined set of markets, set of product definitions, attention to customers and so on.

BY MR. HEDLUND:

Q We have discussed now really just one dimension or one aspect of the evaluation of the intensity of competition in the market.

I would like now to direct your attention to the second dimension or a second dimension that you mentioned,

which was the performance aspect of the coal industry or coal producers; and I would like to ask you what you feel the record in this case shows as to the degree of competition among coal suppliers, and with particular reference to the electrical utility market in this period of 1957 to 1967.

A I think it has a good deal to say about the effectiveness of competition. I think we see and perhaps the most dramatic statistic of all is one of the ones that I think is in one of Dr. Netschert's tables, which [2143] shows that the price of coal per unit energy, that the energy, that is the cost per million BTU's, I believe that is the figure, has not increased over this 10-year period, that this in a period when most costs have gone up, when wage costs in the coal industry have gone up is clearly testament to the fact that the industry and the competitors in this industry are doing their best to hold that market, the electrical utility market, in the face of having lost some of their other markets.

They have succeeded by one means or another in keeping costs low. I think partly this has been due to a growth in size, the ability to use more efficient techniques, the ability to achieve unit rates on trains.

I believe the statistics do show, in fact, that the coal freight rates, another one of Netschert's tables, suggests that they have actually not only increased less rapidly than other freight rates, but they have actually decreased in the last 10 years, that the cost per ton of coal transported has decreased.

I regard all of those things as the kinds of performance you would expect to see if an industry were fighting very hard to keep its prices low. It is not, of course, enough to try hard. You must succeed and, it seems to me, they have succeeded so they [2144] get in a period, in a decade when industrial prices in general were rising, rising not negligibly, that coal has kept the price of its commodity relatively low.

Perhaps another aspect of the same thing is what you see in the productivity statistics, a sharp increase in the output per man-day worked over this period. This, again, is the kind of response you would expect.



I think, finally, and this comes back to something I said a moment ago, you have seen an industry change and adapt to this dramatic change in the demands placed upon it.

The coal industry, as I remember it, not from any detailed study but from the general impression I had of it 20 years ago, was regarded as a dying industry, an industry faced with the decline of its markets.

It was considered to be a sick industry. The industry has responded to this by finding and, apparently, maintaining and keeping production up, finding alternative ways to use its products.

It has responded to this notwithstanding the loss of those markets, notwithstanding the development of a brand new substitute commodity, nuclear energy being clearly a threat to it.

Gas has become an increasing threat to it. [2145] Notwithstanding the fact in a national sense coal has decreased in the percentage share of the total energy requirements, coal has managed not only to hold a market but to hold its price in that market over that 10-year period quite low.

This is precisely, I think, the kind of a thing you would expect a competitive industry, an industry that was faced with intensive competition to have achieved.

Q In summary, what would you say in terms of the degree or intensity of competition that you have among coal suppliers in this period of 1957 to 1967?

A I think you are asking me there to address myself to, was there evidence in terms of performance that led one to reach an inference about how effective competition had been?

Q That is right.

A And I would say the performance is wholly consistent with and suggests to me that there has been intensive competition among coal producers. That has come, in my view, not only from competition among themselves but from competition with alternative sources of energy.

[2146] With the sources, if you will, that have wiped them out of certain markets and threatened to cut out

their relative share of the electric utility market, but they have held a good portion of that market, I would think, by their success in keeping their price relatively stable.

Q In your opinion is this intensive competition or the level of competition which you have described as intensive in the past decade likely to continue?

A Yes, I think that the decade ahead has somewhat different factors than the decade past.

I think it seems quite clear that while it was the rumble of nuclear energy in the last decade it's going to be the fact of nuclear installations in this decade that is visible.

If I recall those statistics of Netschert having less than 1 percent nuclear capacity in place but the levels of orders and the testimony of Commonwealth Edison, the testimony of TVA, suggests a decade from now that is going to look very different.

I think a second source of pressure on coal producers that will require them to be competitive is this very clear and very pervasive concern with the environment, with air pollution.

[2147] Now, I don't know how that problem is going to be solved, but it is going to be solved by increasing the cost of the use of coal, whether that is by the need to find lower sulphur coals or to utilize those, or the cost of removing sulphur from coals when and if that is feasible, all of these things are going to make it necessary for coal to keep its price as low as it can if it is going to effectively compete, to which I think it will not in my own guess, this is based on the record, and I am not an expert in this, and I think it will not keep pace with the growth in electric power; but whether it can keep its absolute market or even increase it somewhat will depend on the extent to which it is able to keep its price low and to respond to the changes and the demands upon us.

I guess I regard this pollution question as again providing a challenge both to the utility and the coal industry. It's the kind of external change in the demand that again puts pressure on the industry, and I

would think that the industry would be under great pressure to adapt to that, in adapting to it, to find ways of producing cheaply, and this, after all, this competition, this striving to meet these challenges is, I think, what competition is all about.

[2148] Q Are there other challenges aside from—other challenges or pressures aside from the two you mentioned in lieu of competition and environmental competition which you think will be present in the next decade that will have an effect on the intensity of competition to us?

A I think that this was implicit in what I said. I think that the rivalry among themselves of coal producers will continue. I think the pressure on coal producers from the buyers of their product, from the electrical utilities, if you think of that group, these are people who are anxious, I think, to keep the costs of their operations as low as they can.

These are large buyers who put pressure—who put pressure on them—on the railroads, and on others, to try to get coal delivered.

So that I think in this context both the intra-coal rivalry and the fact that coal contracts are bargained for across a bargaining table with large informed, capable buyers, all are additional sources of competitive pressure on the coal producer, on the individual coal producer.

I think, by the way, there will be more casualties. I think there are still a relatively large [2149] number of small coal companies. I wouldn't be at all surprised to see coal companies with production of under 100,000 tons to continue to disappear.

I think, as I say, I think that is a different breed of cat, but they are referring to dogholes, so maybe I think we should change the metaphor.

[2150] Q In that regard, Professor Steiner, do you have with you Government Exhibit 72, which is—I want to develop this point a little further—Government Exhibit 72 which is the Illinois production for 1967, and Government Exhibit 85, which is the production for the three-state area?

Do you have copies with you to give the Court?

MR. CUSACK: Do you have an extra copy, your Honor? It's in Volume 10 of the statistics.

MR. HEDLUND: Volume 10, Tab 11, your Honor, and Tab—

THE WITNESS: I have 72, but not 85, Mr. Hedlund.

MR. HEDLUND: I will give you mine. I will give you my Government Exhibit 85.

THE COURT: What tab number was that, Mr. Cusack?

MR. CUSACK: Tab 11 for the production in Illinois of 1967.

THE COURT: All right.

MR. HEDLUND: And you have a tab number for Government Exhibit 85? I assume that is 24 or 25.

MR. CUSACK: You are referring to 86, aren't you?

MR. HEDLUND: Pardon me.

MR. CUSACK: Production of coal in Illinois and [2151] western Kentucky of '66-'67?

MR. HEDLUND: I am referring to 85.

THE COURT: That is No. 25.

MR. HEDLUND: You have that, your Honor?

THE COURT: Yes.

BY MR. HEDLUND:

Q Professor Steiner, looking at Government Exhibit 72 and 85, I am going to ask if you could relate in these statistics in terms of the size of the companies, and having in mind the histories of the companies shown here, the extent to which you can relate this to the, if I may use the term, intramural pressures or challenges among coal suppliers?

A I wonder if I might have that question read back?

THE COURT: Read the question.

(Question read by reporter.)

BY MR. HEDLUND:

Q And whether those pressures are going to continue?

A Well, I think one of the things that, if I may look at the Illinois figures, that there are—if we look at the eight leading suppliers—that will be to Ayrshire—we have eight producers—substantial [2152] producers

in terms of tonnage, and if I look back to 1957, I find those eight producers also with substantial shares.

I think one of the things that—if one looks at the group and I don't know if this is what you had in mind, Mr. Hedlund—but if you look at the group from the third to the eighth of these companies, they are all substantially sized, clearly of a size that is capable, if they have reserves to back up this level of production, capable of continuing to operate in a utility market.

They have not—if I remember the statistics year by year—not found themselves losing ground over this 10-year period—that is the contrast between these large companies in this decade and the much smaller companies, the remaining companies as they are here called, has been very different.

These companies appear to have a size that has made them at the beginning of this period significant factors in that market—at the end of the period significant factors in that market—and I know of nothing in the record that suggests that situation will change.

I see no tendency, for example, in Illinois for companies with production in the neighbor- [2153] hood of two, three, four, five and six million tons no longer be strong competitors. I will put that positively. The evidence, as I see it, is that those companies are in a position to compete in this market.

Q This would, of course, would it not, Professor Steiner, depend upon the reserve base of these eight companies?

A Well, that's right. I said, and with one of the troubles with looking too long at these statistics is that they show what they show and they fail to show certain other things.

If we assume these companies have reserves—what I am saying here, I think, is, and perhaps you are saying the same thing—is in order to be an important competitor in this market one clearly needs both; production capability and the coal to produce, and thus both production capability and reserve capability are important.

I was addressing myself to the fact that while the small companies, the remaining companies which have



been disappearing and which I would expect would continue to disappear, do not seem to me to lack the production capability to deal in this market.

[2154] This other group of companies do have that capacity, and I think you see much the same thing in the three-state area table, but you have, in that case, I think, ten companies over 2 million tons, and they all look to me in the sense in which the record discloses any thing at all about what is required for viability, and I think it discloses a good deal, they all look to me to be viable competitors.

[2155] Q I would like now to go back to the subject that you mentioned, and that is the definition of the markets that have been adopted by the Government in this case.

As you know, their statistics and their contention holds that there are two relevant markets, one the State of Illinois, and the second what has become—has come to be called the Eastern Interior Coal Province sales area, which I will not even attempt to describe, but which involves some seven or eight states or portions thereof.

I believe you have testified that you are not satisfied that either of those markets were in fact economically realistic, and I would like to ask you why you feel that way?

A I think I haven't so stated with respect to the Eastern Interior Coal Province sales area but I do, I now so do.

I think the reasons are different for the two although they are part of the same basic argument. I think neither one of those two designations corresponds to the kind of homogeneous set of transactions that it makes sense to look at separately, as a whole, and to exclude other transactions.

[2156] If I might take, first, the notion of the Illinois market. I think if one looks, for example, at some group of producers—and I am now just glancing and looking at the producers in the Belleville area—having looked at their statistics with respect to where they ship their coal, I find that their customers tend to occur in several

states; that indeed if I were defining their market area, it would be defined more by the Mississippi River Valley than either the State of Illinois or a group of other states.

MR. CUSACK: Excuse me, Professor, your Honor, may I say something? May I please have a continuing objection on the record, your Honor, on testimony in regard to the relevant geographic market in the light of U. S. v. Pabst Brewing Company, 384 U.S.

THE COURT: You may have a continuing objection on that subject.

MR. CUSACK: Thank you very much.

BY THE WITNESS:

A I was talking about why I was unhappy with the Illinois market.

One reason I am unhappy is, I think a great deal of the coal that is produced in particular regions of Illinois is not in fact shipped either [2157] uniformly throughout the State of Illinois, nor indeed so limited.

To use perhaps one example, using that Belleville area. We can look at others, if you want.

The second from the point of view of customers, if I turn the thing around, if I take a group of, let us say, utilities located in a portion of Illinois, it is not true either that they buy all of their coal from Illinois or that they buy entirely throughout the state. They may, indeed, have much more narrowly defined areas.

I think that for both of those reasons, and the fact as I said earlier, that I believe one can do better on the basis of the data collected either by the Government or by the defendants, we can get a better approximation of the markets, we shouldn't use that.

I find, secondly, the notion of the Eastern Interior Coal Province sales area genuinely baffling. I spent a good deal of time trying to figure out the criteria by which the Government defined that particular area. It is perfectly clear that there are customers outside of the area who receive substantial [2158] amounts of coal produced within the State of Illinois, for example. This is true of that area that is excluded in the State of

Wisconsin, up north of Milwaukee, up toward Green Bay, Sheboygan, Manitowoc, and so on.

I also find substantial amounts of production by producers within that area that goes outside to other areas and at the same time areas within the sales area that receive none of this coal.

Looking at the Bureau of Mines statistics, for example, I looked at west Kentucky producers who are within that area. They ship virtually no coal, some I think, but virtually none to eastern Iowa or eastern Missouri. They ship a great deal of coal to Mississippi and Alabama. I do not know the logic by which that area is defined.

By the same token, there are areas within that, there are areas within some senses are much too narrow. Are you saying this is every place that coal goes that is produced within the area? The answer to that is no.

On the other hand, it's much too narrow—excuse me—much too broad in the sense that there are clearly large areas within that market that [2159] do not receive coal from other regions within it.

I think virtually none of the coal that I know of that is produced in southern Illinois; Belleville, Springfield, Fulton, Peoria, goes to Indiana, for example. Very little of the Indiana coal comes to Illinois. It does not then have the kinds of cohesiveness of a group of transactions that seems to me to make it necessary for—sensible to treat it as an economic market.

But I have, really, have the basic trouble perhaps this will be cleared up on cross examination, I do not understand how the Eastern Interior Coal Province sales area was drawn and not understanding that I cannot discuss the logic of its being drawn in that way. It seems to me not to be in accord to the facts, as I read them.

[2160] Q In summary then, if there is no such thing in terms of economics or economic analysis of an Illinois coal market, and if there is no such thing again in terms of economic analysis as the Eastern Interior Coal Province sales area, how does this affect the validity or the meaningfulness of the production shares of companies produc-

ing coal in Illinois or production shares of companies producing coal in the three-State area?

A Well, as I think I testified earlier, I do not believe production shares, market shares, concentration ratios make sense at all, or have any genuine indication of the degree of competition unless they are measured in a meaningful economic market. I think that without a market one does not have the basis of using these statistics. Within a market one has certain problems in using market shares, but I think that those are so greatly intensified when one has, one does not feel it's a sensible market because it's too broad or because it's too narrow.

I don't believe you just draw circles on a map and say that is a market. I think you can do that, but I think you lose economic insight when you define markets in that way, and you lose insight, the insight, [2161] that concentration ratios give when you define them in that way.

MR. HEDLUND: Your Honor, I am about to go into a new and rather lengthy area. Would you like to adjourn?

THE COURT: Why not go for another 10 minutes because we have a deadline that is coming up.

May I inquire how much more do you anticipate that you will take?

MR. HEDLUND: Your Honor, I would think I would have about another hour with this witness.

THE COURT: Another hour?

MR. HEDLUND: Another hour.

THE COURT: So we put it in the right posture, if we take that recess, can you proceed much more effectively or use the 10 minutes to advantage?

Do you have a comment?

MR. CUSACK: My comment was, as told by Mr. Hedlund at the last break, he would go all day with Professor Steiner. You do think you will finish in an hour?

MR. HEDLUND: Yes. I think I will finish in an hour.

\* \* \* \*

[2171] THE COURT: You are entitled to your interpretation, certainly, and I think it was not made a part of the record here. Mr. Bane should be here so he would have that opportunity. That is the only thing I have to say.

As far as the Court is concerned, if it all [2172] has to go on the record, it goes on the record. I indicate and I will make a ruling as to whether I think the offer of proof made here is an essential part of it.

The only question I had was whether or not the preliminary remarks—Mr. Cusack, I am well acquainted with the rule he cited here, and all I thought was that there was an understanding between counsel, and I look at it as officers of the court, and I say there is nothing in there to indicate that, but we have to live together and we have to work together, and I say to take that element of it in mind and, certainly, Mr. Bane should be considered on it.

We will put it over to 10:30 tomorrow morning which will be about the time we get started. All right, thank you.

Are you ready to call your witness, Mr. Cusack?

MR. CUSACK: Yes, your Honor.

MR. EISEN: I am sorry, your Honor. I didn't know we agreed to put this man on the first thing. Otherwise, he would have been here.

THE COURT: All right.

ROBERT H. QUIG,

called in rebuttal by the plaintiff herein, having been first duly sworn, was examined and testified as follows:

[2173] DIRECT EXAMINATION

BY MR. BRAUN:

Q Would you please state your name for the record?

A My name is Robert H. Quig, Q-u-i-g.

Q What is your address, Mr. Quig?

A My business address is 320 Park Avenue, New York, New York.



Q By whom are you employed?

A I am employed by Chemical Construction Corporation.

Q Is that firm sometimes known by the name Chemico?

A Yes, it is.

Q How long have you been employed by Chemico?

A I have been employed by Chemico for three and a half years?

Q Could you briefly describe for us your experience in the field of air pollution.

A Yes, for the past three and a half years I have been employed by Chemico with the title of engineer, utility operations; and in that time I have been in charge of the management, control and development of pollution, the development of pollution control [2174] systems for use on power plants and other stationary sources to control various discharges of pollutants.

[2175] Q And for how many years, if you know, has CHEMICO been engaged in the study and research on pollution?

A CHEMICO's corporate business has been for over 50 years in the chemical process industries and for approximately 25 years in the construction of pollution control systems.

Q Could you briefly describe your educational background and the extent to which you have received any degrees.

A I am a graduate mechanical engineer from college, Lafayette College, and I am a registered professional engineer.

I have a graduate degree in Business Administration.

Q Does CHEMICO have a commercially feasible process for the removal and disposal of sulphur dioxide gases which are created by the generation of electric power?

A CHEMICO—yes, CHEMICO has a process to offer for the removal and disposal of stack gases from power plants.

Q Could you explain this process and how it works.

[2176] A Yes. We would approach a pollution problem on a power plant for a disposal effort in that we

would build a scrubber system whereby the flue gases discharging from the boiler of the power plant would be diverted into the scrubber, and at that time absorption of the  $\text{SO}_2$  would be done by the addition of alkali such as calcium oxide, and this calcium oxide can be obtained from various sources, limestones and limes in a regional area.

In the scrubber the calcium oxide reacts with the sulphur dioxide forming calcium sulphide and sulphate which, in turn, is discharged to a disposal area similar to the removal of fly ash or bottom ash from the boiler.

Q And is this process one which, in your professional judgment, could be installed on an electrical utility generating station commencing tomorrow?

A Yes, it can.

Q Does CHEMICO also have a process for the removal and recovery of sulphur dioxide stack gases?

A Yes, we have a process.

Q Would you explain how this process operates?

A Essentially using the same scrubber arrangement on the power plant we would add, instead of calcium oxides, a better absorbent material, and in this particular case with CHEMICO it is magnesium oxide.

[2177] The magnesium sulphide and some sulphate that is formed is withdrawn from the scrubber system as a dried material, and then it is transported away from the power plant where it is converted through processing techniques to release the  $\text{SO}_2$  again, this time under a controlled environment basis.

The  $\text{SO}_2$  can then be converted directly to sulphuric acid or through the utilization of reduction techniques, elemental sulphur can be recovered.

The magnesium oxide is regenerated and recycled back to the power plant for reuse in the scrubber system.

Q Do you have an estimate of the costs of installing your system which could be based on cost per million British thermal units?

A Which system are you referring to?

[2178] Q Do you have an estimate of the cost with respect to your disposal system based upon whatever the cost would be per million BTU's?

A Estimates of investment and operating costs are determined by several inputs, and it is hard to give a specific example.

As a general across-the-board estimate, though, we look at, say for example, a 600 megawatt power plant having an investment burden of seven to ten dollars per kilowatt, and the disposal costs, along with the capitalization costs and other utility and overhead maintenance costs, it is conceivable you can have a total operating cost of approximately a dollar per ton of coal which is three to four cents per million BTU's fired.

Q Could you similarly describe the estimated costs on your process for the removal and recovery of sulphur dioxide gases?

A The recovery process for the utility power plant site would have the same scope of investment costs. The recovery investment and operating costs we concede to be that of others, and the reason that one would go to a recovery effort is to avoid the disposal problems associated with a calcium-based scrubbing system.

[2179] Q In your professional judgment, would adding the costs of your pollution control equipment to a new coal-fired generating unit be more or less expensive than the cost of building a similar sized nuclear generating station?

MR. HAUBOLD: Your Honor, I object unless counsel lays a foundation as to this witness possessing knowledge of the nuclear industry.

THE COURT: Lay the foundation.

BY MR. BRAUN:

Q Mr. Quig, have you or any of the companies with which you are associated, manufactured or designed nuclear power plants?

A My company, Chemical Construction Corporation, does not build nuclear power plants, but in our discourse on the whole problem of environment, we have been led to believe from the many utilities and engineer organizations which we deal with that we under most conditions could build a SO<sub>2</sub> removal system that would be cheaper than a nuclear unit at this time.

MR. HAUBOLD: Your Honor, I object to the testimony of the witness to the extent that he has been led to believe certain facts, and I move that it be stricken as unresponsive.

[2180] THE COURT: Do you have any comment?

MR. BRAUN: He has testified that he has been led to believe that by engineering studies as well as by what would otherwise be hearsay.

THE COURT: The latter part would be stricken because it shows he has no direct acquaintance with it, that he is led to believe. There is no basis for cross examination.

MR. BRAUN: May I approach the witness?

THE COURT: You certainly may.

MR. BRAUN: I will ask the Court Reporter to mark, for identification, a Chemico brochure entitled "Removal and Recovery by the Central Process Concept" as Government Exhibit 312.

(The above-described document was thereupon marked as Government Exhibit 312 for identification.)

MR. BRAUN: May I approach the bench, your Honor?

THE COURT: You may.

\* \* \* \*

[2185] THE COURT: Well, let me state that I will admit it subject to a motion to strike if it is shown on cross examination that there is not the proper foundation for the underlying documents which is incorporated in and made a part of this speech.

MR. BRAUN: Thank you, your Honor. I have no further questions.

(Whereupon, the document previously marked as Government Exhibit 313 was received in evidence, subject to a motion to strike.)

THE COURT: All right, are you ready to cross examine?

MR. HAUBOLD: Yes, your Honor.

THE COURT: All right, you may proceed.

## CROSS EXAMINATION

BY MR. HAUBOLD:

Q Mr. Quig, is it not a fact that Chemico has never operated any of its SO<sub>2</sub> removal or recovery processes continuously in any integrated large scale power plant?

A That is correct.

. . . . .

[2191] Q Now, Chemico is currently—strike that.

Is it not a fact that Chemico, as yet, does not have a contract or firm commitment to build or construct a prototype sulphur recovery unit?

A We do not have a contract.

Q Chemico is presently attempting to secure some financing from the Federal Government to further its development of the recovery process, is it not?

A That's correct.

Q And is it a fair statement that Chemico has no present intent to finance a prototype model of the sulphur recovery process, assuming that the Federal Government is not willing to put funds into it?

A We are engineers and constructors, not investors, so we would build these systems. I doubt at the moment whether or not we would pay for the total cost of a large prototype ourselves, yes.

Q Assuming that funding is forthcoming, at some future time, for a prototype operation, would not the construction of a prototype sulphur recovery system require from 2 to 2 and 1/2 years?

A Yes, that is a fair estimate of the time.

. . . . .

[2197] Q Well, are you refusing to answer on the basis that you are not able to make such a statement?

[2198] A I think on giving so-called testimony on nuclear unit operating costs, I don't think I would be an expert witness, in my opinion.

MR. HAUBOLD: Just one moment, your Honor. Just one final question.

THE COURT: All right.



BY MR. HAUBOLD:

Q I am reading from page 14 of Government Exhibit 313, and ask you if this is your opinion:

"Contact over the past two years with utility management has made us think that it would be wrong judgment by fuel suppliers to expect the utility to finance and resolve the total SO<sub>2</sub> problem alone. If the utilities are left to develop their own response in achieving ambient air, they may very well trend towards the use of substitute fuels."

Is that your opinion, Mr. Quig?

A Yes.

MR. HAUBOLD: I have no further questions.

THE COURT: Any redirect?

MR. BRAUN: Yes, your Honor.

[2199] THE COURT: All right. You may proceed.

### REDIRECT EXAMINATION

BY MR. BRAUN:

Q Mr. Quig, when Mr. Haubold asked you a moment ago whether you believe utilities were willing to finance the recovery process alone, were you referring to the third state of your recovery process as opposed to the removal of sulphur dioxide from stack gases?

A Well, I believe that the utilities would prefer to be removed from financing Chemico's recovery process operations. Whether or not they finance it or not has to be weighed in with their total viewpoint on how they are going to approach their air pollution problems.

Q Have you had over the last several years conversations with utility personnel who are interested in the Chemico process?

A Yes, we have.

Q And have a number of these utilities expended or indicated to you their willingness to expend 2.5 million to build a prototype unit?

MR. HAUBOLD: I object, your Honor, on hearsay. Counsel is asking the witness to speculate as to what the intent of these various other parties are.

THE COURT: Well, he said had they indicated their [2200] willingness.

You may answer.

BY THE WITNESS:

A Yes, we have utilities who have indicated to us their willingness to invest into a prototype SO<sub>2</sub> recovery operation.

BY MR. BRAUN:

Q And what amount of money have they indicated in their willingness to invest?

A It would range, depending on the scope of the work, in the range of 2.1 to 2.5 million dollars.

Q Mr. Haubold asked you earlier about the various load factors of generating stations. Were these factors taken into account in your consideration of the costs of utilizing the Chemico process?

A Yes. The purpose of recovery concept is to avoid the problem of power plant load factor.

Q Now, you indicated on direct that you agreed with the statement that recovery of sulphur would be elusive. Are you prepared to build your disposal unit into a generating station at the present time?

A Yes, we are prepared to bid on that type of a system.

Q Do you believe that your recovery system will [2201] be commercially feasible and operable, based on your professional judgment within the next five years?

A I am sorry, you said recovery?

Q Yes, your recovery system.

A Yes, we believe that.

MR. BRAUN: I have no further questions, your Honor.

THE COURT: Any recross?

MR. HAUBOLD: No recross, your Honor.

THE COURT: All right. Thank you, sir. You are excused.

THE WITNESS: Thank you.

(Witness excused.)

MR. EISEN: Your Honor, I just was going to make a statement and I know the Court admonished us not to quibble about documents. I didn't want to raise it before, but maybe I am quibbling now. Neither one of these gentlemen had these documents before the witness came to town, neither side. I just want the Court to know that.

MR. HEDLUND: I don't want to quibble, but let's get the record straight that this is a Government witness and a man identified him some three weeks ago, and I don't think it excuses them, but I don't want to take the Court's time, but I think the record should be clear.

THE COURT: The documents are in, let's not quibble.

\* \* \* \*

[2203] THE CLERK: Case on trial.

THE COURT: Are you ready to proceed?

MR. HEDLUND: We are, your Honor.

THE COURT: Will the witness take the stand.

PETER O. STEINER,

called as a witness by the defendants having been previously duly sworn, resumed the stand and was examined and testified further as follows:

# DIRECT EXAMINATION

(continued)

BY MR. HEDLUND:

Q Professor Steiner, as part of your time or responsibility in connection with this litigation, did you yourself or have any of your colleagues attempt to prepare a statistical analysis looking toward the identification of economic, realistically economic markets within the Midwest?

A No, I did not.

Q Did you give defense counsel any suggestions along those lines?

A Yes, I did, a great many.

Q Could you tell me, sir, exactly what you suggested might be done in that respect?

A What I suggested after reading some of the [2204] depositions and hearing some of the testimony, was that it sounded to me as if it would be possible to find identified groups of purchasers who were purchasing coal from identified groups of suppliers, and that there would be perhaps also a situation in which those same customers were among the major group of customers of that same set of suppliers.

I think I am not being entirely clear, but it is suggested to me there might be buyer-seller constellations which could account for a large percentage of the coal consumption of the buyers and, at the same time, a large percentage of the coal sales of the selling groups.

I urged that we look on the basis of the evidence I knew was being collected, that we look and try and identify such groups of buyers and sellers who might appear to be closely related to one another in an economic market.

Q Let me ask you before going into detail, if it were possible to collect such constellations, what, in your opinion, would that indicate?

A Well, if I found a group of customers, let's say, who were buying 80 percent or 90 percent of their coal from one group of buyers, from one group of [2205] sellers, and at the same time those sellers were located in an area and were providing 80 percent or 90 percent of their output to those groups of customers, it would suggest very strongly that there was a strong set of economic factors that linked those buyers with those sellers, and it would make sense to take that group of transactions and treat them as if they were a sensible grouping for economic analysis.

It would be precisely the sort of relevant collection of transactions to treat as a unified whole rather than separately.

[2206] Q Do you have with you, Professor Steiner, what has been received in evidence as Defendants' Exhibit No. 55?

A Yes, I do.

MR. HEDLUND: So that the record is clear, this consists of a series of tables designated as D-1-F to D-3-F, D-1-S to D-3-S, D-1-B to D-3-B, D-1-SO to D-3-SO, D-P and D-X.

BY MR. HEDLUND:

Q Have you made yourself familiar with the contents of this exhibit?

A Yes, I have.

Q By way of example, and without going through the entire document, I would like to direct your attention to Tables D-1-F, D-2-F and D-3-F, and I would ask you to explain what you believe those tables show and what the purport of the information is demonstrated thereon.

A Well, I believe these three tables show that it is possible to define a sales area surrounding the Fulton-Peoria freight rate district, that quite accurately defines a market for Fulton-Peoria coal, the market in the dual sense that I described a minute ago.

Not only did most of the coal go to an identified group of customers, but those customers also relied very heavily on the Fulton-Peoria producers to supply their needs. The tables are divided as between utility customers and non-utility customers; and the first page relates to the utility facilities utilizing this coal; the second page to non-utility facilities. The third page is a combined summary.

I should say that in analyzing these data, and particularly important with respect to this example, is that it seemed to me and also I think to defense counsel appropriate for reasons we can go into later, if you like, to consider Commonwealth Edison as a separate buying market and to treat it separately for reasons, as I say, that we can go into.

Do you want me then to discuss briefly what I think the table shows?

Q If you would.

A If one looks at the first page of Table D-1-F, we have identified three companies with a variety of facilities there in the Fulton-Peoria sales area which,



if one looks, and this is shown under No. 2 on the first page of this table, that these facilities, when one looks at their total consumption of coal, 87 percent of the consumption of coal of that group of utility facilities [2208] comes from producers in the Fulton-Peoria district.

13 percent comes from producers in other districts as is shown, 13 percent; 12 percent from Belleville and 1 percent from Mineral Atkinson.

It is true for this group of companies they consume a substantial fraction of their coal from a single producing area and virtually all the rest of it from a second area.

Turning it around under No. 3, we see the Fulton-Peoria producers sell all of their coal that goes to utilities in either this consuming area or to Commonwealth Edison.

It is, I think, these particular customers then account—these three utilities plus Commonwealth Edison account for all the utility coal produced in the Fulton-Peoria district and, at the same time, the Fulton-Peoria district accounts for 87 percent of the coal consumed by customers in that area.

Moreover, these customers are geographically related to one another in a definable way. They all have plants along the Illinois River and thus this seems to define both in customer and seller relationships a geographic market area that is determined very largely by this river coal, this barge coal, which much of the [2209] Fulton-Peoria coal is, and that seems to account for it and it seems that Fulton-Peoria utility coal, insofar as it goes to the utility market, is very much less than the state-wide market in a sense.

[2210] The second page attempts in a similar way to treat the non-utility facilities that consume Fulton-Peoria coal and analyze them in much the same way.

No. 1 on page—on table D-2f identifies the specific installations, the number.

The No. 2 on the second page of this exhibit shows that this group of customers are getting 85 percent of their coal requirements supplied to them by Fulton-Peoria producers, and flipping the page, on the third

page, which is table D-2f continued, you see that these utilities—excuse me, these customers defined get 70 percent of the non-utility coal produced by producers in the Fulton-Peoria district. 24 percent is sold to customers in the Chicago air quality control area, a region we have also segregated for what I think are valid reasons, I suspect you will want to go into later, thus leaving out those sales. If one leaves out the Chicago market, 70 out of the 76 percent out of that table goes to this group of buyers.

They, thus, are principal customers of the Fulton-Peoria producers and turning it around, those customers get most of this coal from the Fulton-Peoria [2211] district.

Page D-3f combines them, the utility and the non-utility market, and that shows in summary fashion under No. 1 that taking this group of customers as a whole, of their total coal consumption 86 percent of it comes from the Fulton-Peoria area, 14 percent as there described comes from other areas.

Looked at from the point of view of the producers, 46 percent comes to the identified facilities in that area. Another 45 percent to Commonwealth Edison, which, of course, also is very largely river stations in that area, and another 7 percent is the Chicago air quality control region, thus accounting for the great bulk of the production and thus in this sense, it seems to be an economically sensible matching of a group of customers with a group of producers.

Q There are similar tables, are there not, in Defendants' Exhibit 55 relating to sales and consumption of coal produced in the Springfield Freight Rate District and in the southern or in the Belleville Freight Rate District and in the Southern Illinois Freight Rate District?

A Yes, there are. The next three sections of [2212] this table take the other three districts in which defendants have mines and make similar analyses for each such district.

Q If we were to go through each of those three, I gather your explanation of this would be the same?

A Their structures are precisely the same. The areas are different. The identities of the customers are different, of course.

MR. HEDLUND: In an attempt, your Honor, to make this a little more understandable, we have prepared but will not offer into evidence a map of the general area in which we have been dealing. The cross-hatched on this map represents the Federal air quality control region which is defined in the Code of Federal Regulations as the counties surrounding Cook County and, of course, Cook County itself.

We have also indicated but with only rough geographic proximation, the facilities, generating facilities, coal generating facilities of Commonwealth Edison which are basically Chicago, which include the river stations, Joliet, over in Hammond and Rockford and Dixon and Pekin and Kincaid and up in Waukegan.

I would like Mr. Kempf, if you will, to place on that map the overlay depicting roughly— [2213] well, the overlay with respect to the Fulton-Peoria utilities sales area.

MR. CUSACK: May I look, your Honor? It is the first time I have seen this.

THE COURT: You certainly may.

[2214] BY MR. HEDLUND:

Q Can you see that, Professor Steiner?

A Yes, I can.

Q Does that correspond to what you believe to be a rough geographical representation of the facilities located, that is the generating, utility generating facilities located in the Fulton-Peoria sales area?

A That band, which I remember, goes down the Illinois River and is somewhat wider, of course, than the river itself, but I think that picks up these stations that we identified here as the utility facilities located in the Fulton-Peoria sales area, yes.

MR. HEDLUND: Mr. Kempf, would you remove that and place on the overlay, the Fulton-Peoria non-utility sales area?

BY MR. HEDLUND:

Q Professor Steiner, does this correspond with your understanding of the geographical representation of the facilities in the Fulton-Peoria non-utility sales area?

A Yes. I do not vouch for the exact accuracy of the lines, but stretching in that case west and north from the Illinois River is the area in which each of these facilities that were identified on Table D-2-F is located. [2215] MR. HEDLUND: Mr. Kempf, would you remove that, please, and put on the overlay with respect to the Belleville utility sales area.

BY MR. HEDLUND:

Q Having done so, now, Professor Steiner, does this overlay correspond to your understanding of the geographical location of the utilities in the Belleville utility sales area?

A Yes, these are the utilities identified by name on Table D-1-B.

They fall in two groups. There are those in the St. Louis area, and the facilities in the St. Louis metropolitan area, and then the Mississippi River stations in Illinois, Iowa, Wisconsin and Minnesota.

MR. HEDLUND: May we have the Belleville non-utility sales area, please.

BY MR. HEDLUND:

Q Again, Professor Steiner, does this overlay correspond to your understanding of the geographical location of the facilities in the Belleville non-utility sales area?

A Yes, the facilities listed in Table D-2-B all fall or at least approximately fall within that area around and south of St. Louis.

[2216] MR. HEDLUND: May we have the Springfield area, please.

MR. CUSACK: I think you should point out for the record that is with the exception of the coal sold to the Greater Chicago Air Quality Control Region.

MR. HEDLUND: Yes, as we define it. That is understood throughout.



**THE WITNESS:** My understanding is we are excluding the sales to Commonwealth Edison and to the Chicago Air Quality Control Region in every case, your Honor.

**THE COURT:** That conforms with your understanding?

**MR. CUSACK:** Yes, your Honor. I just wanted to make it clear.

**THE COURT:** Yes.

**BY MR. HEDLUND:**

**Q** You have now placed on the map the overlay for the Springfield utility sales area, and does this correspond with your understanding of the geographical location of the utilities in that sales area?

[2217] **A** Yes, it does. These are on table D-1s of the exhibit. They are in that rather narrow band around Springfield itself.

**MR. HEDLUND:** May we have the overlay for the Springfield non-utility sales area.

**BY MR. HEDLUND:**

**Q** Again does this overlay correspond to your understanding of the approximate geographical locations of the non-utilities in the Springfield sales area?

**A** Yes, it does, a slightly largely perimeter but in the same general area as the utility sales area.

**MR. HEDLUND:** And the overlay for the Southern utilities, please.

**BY MR. HEDLUND:**

**Q** Again, Professor Steiner, does this correspond to your understanding of the approximate geographical location of utilities in the southern utility sales area?

**A** Yes, it does. This divides into three distinct groups. The group in the northeast of Wisconsin—by the way, some of that is outside—this goes, a good bit of it, to places like Green Bay and Sheboygan, and so forth, and I believe that goes to Chicago by rail and rail to ship and then to the lake [2218] ports.

The second large area west of the Mississippi is, I think, rail coal from the Southern Illinois Freight Dis-



district, and then there is some in the southern portion of Illinois that is again distinct.

It is possible to identify these clusters of customers for which there was this reciprocal type of relationship.

MR. HEDLUND: And, finally, may we have the overlay for the southern non-utility sales area.

BY MR. HEDLUND:

Q Again, does this correspond to your understanding of the geographical location of the non-utility facilities in the southern sales area?

A Yes, it does, and these areas are very similar, somewhat broader, again, than they—they are the same three basic areas as up here on the utility sales area for Southern Illinois Freight Rate District producers.

Q Now, while I ask Mr. Kempf to replace all of the overlays, I would like to ask you two questions. In the analysis that we have just looked at contained in Defendants' Exhibit 55, do you believe that it was valid or meaningful to separate or hold apart the [2219] shipments with respect to Commonwealth Edison?

A Yes, I do.

Q Would you explain why?

A The dominant reason, but it is only one of two major reasons, is the quantity of coal purchased by Commonwealth Edison for its stations which are shown by the black dots, although there are more stations than there are dots.

If I remember the testimony and the record in this case, Commonwealth Edison purchases between 17 and 19 million tons of coal a year, approximately a quarter of the total coal produced in the State of Illinois. It purchases more than it could purchase from any single district and, thus, its purchases are necessarily spread throughout several, though I think not all, producing districts, if I remember Mr. Corey's testimony.

For that reason, because simply the volume of its purchases and the fact that it of necessity was purchasing in many areas simultaneously, and because it was such a large purchaser, it seemed best to recognize it as an important purchaser but, nevertheless, to treat it separately.

Without it we would have failed to see, [2220] I think, the clear pattern that affects the rest of the purchase of utility and non-utility purchases alike.

The second reason which perhaps justified treating it separately, and even if the other had not been present, is the fact that it is in particular—it appears to be in particular concern of the air pollution regulations in and around the Chicago area, and because it has already made such a heavy commitment to nuclear and to the substitution in a substantial sense of nuclear for coal, particularly in this case for the relatively high sulphur Illinois coal that it has been buying in large quantities, it seems for that reason as well that if we deal with the Commonwealth Edison purchases of coal, it is well to keep them separate to recognize this as a distinct problem as an identifiable sub-market that is worth looking at as a sub-market.

[2221] Q In your opinion, is it valid or was it valid and meaningful to separate the shipments into the Chicago Air Quality Control Region or what is also referred to as the Federal Interstate Greater Chicago Air Quality Control Region?

A I think again for two reasons, perhaps not the same two, but one is similar, these facilities in aggregate are all in this area where air pollution requirements are going to impinge upon them and may impinge quickly.

Many of them, I understand, either have or are considering the use of alternative fuels. In any case, many are concerned with this problem.

It seems well to recognize they had a common set of problems with respect to supply, and while it was necessary to look at their purchases, it is helpful, I think, to look at their purchases, because of their common problems, separately.

Second, in aggregate these are, in the main but not entirely, I believe non-utility users. I think there is one exception. There is one utility company in that area, Commonwealth Edison having been separated, and I think it is Northern Indiana Public Service Company? Other than that, they are industrial users.

[2222] They, in aggregate, have a volume of demand which again requires them to utilize coal from many areas. Because Chicago is the kind of a rail hub that it has been traditionally, the plants in this area are served by rail from virtually all of the producing areas in the state.

I think for that reason, too, it is helpful to regard it as a definable separate sub-market. I think there is insight in that separation.

Q Now, having placed—well, with that background and having looked at these statistics in Defendants' Exhibit 55, and with reference to the combination of all the overlays on the demonstration map there, what have you concluded or what do you believe this analysis shows with specific reference to Freeman and United Electric and with specific reference to the merger here under discussion?

A Well, the choice of these four producing areas is clearly intended to reflect the areas where these two companies have their producing facilities.

The blue color has been used for the southern Illinois and the Springfield area where the mines of Freeman are located.

The red for the Fulton-Peoria and the Belleville area where the mines of United Electric are located.

[2223] Let me start with a couple of negative conclusions. It seems quite clear looking at that graph as well as the data that underlies it, that the talk of Illinois as a relevant market in which to appraise that merger makes very little sense, just in terms of where the coal from the areas in which those companies produce is.

Second, it seems to make relatively little sense to talk of the area that was defined as the Eastern Interior Coal Province Sales Area. It is, I think, interesting, in fact perhaps very interesting, that none of the coal from those four producing districts goes into the state of Indiana.

The reason, I think, is that I think there are substantial coal reserves in Indiana, and we have testimony to the effect that Indiana utilities tend to purchase

coal not from these areas, but from the mines that are closer to them.

The third conclusion is that it seems appropriate to visualize a series of sub-markets that cross state boundaries, none of which, however, are as extensive as the state, which can best be defined in terms of things like river transportation that accounts for, in that case, the Belleville area and the Fulton-Peoria sales [2224] or the particular kind of railroad facilities that may account for much of the shipment of the southern Illinois coal.

Southern Illinois coal, as I read the record, tends to be high BTU coal located on rail facilities. Those things seem to support longer rail shipments than would be supported by the lower BTU coal from the other areas.

In any case, one does have the distinct impression and, as we saw in the statistics, we pick up a great volume of the transactions, but one has the distinct impression of definable sub-markets.

These are not blurred but distinct sub-areas. The overlaps between utility and non-utility suggests that although that distinction may be important in other purposes, it is not strictly important in the geographical delineation.

The blue areas and the red areas very largely do not overlap.

[2225] This again, I think, confirms data that is in the record that very largely the Freeman—that coal from the Freeman mines and coal from the United Electric mines were largely directed to stations that were in different areas, that they were not in close competition with one another.

Your Honor, I recognize—

MR. CUSACK: The Government objects to it on the basis you are misstating the facts and the evidence in the case, just for the record, your Honor.

THE COURT: All right, the objection may be noted.

MR. CUSACK: Thank you.

BY MR. HEDLUND:

Q Would you like to have the last part of your answer?

A I am not sure what I was saying.

MR. HEDLUND: Could you read back the past portion of the witness' answer.

A (Read by the Reporter.)

THE WITNESS: I think I was finished.

THE COURT: You were finished; all right.

BY MR. HEDLUND:

Q Do you recall exactly what evidence in the record you were specifically referring to in talking [2226] about Freeman and the United Electric?

A I think a large number of the customers testified that they considered coal from the Belleville area, that they did not in fact consider coal from other areas and vice-versa.

There was a great deal of this testimony to the effect of users of coal, what they considered to be the relevant sources of supply and the kind of non-overlap that we seem to have identified statistically appears to be confirmed.

There was also a good bit of testimony, I think, to the effect that where there were common shipments to common facilities—

Q You are speaking here of Freeman and United Electric?

A Yes—that some of these could be understood in terms of somewhat different product than was involved.

I am thinking here of the fact that certain stations received coal from the Belleville District and dust from the Southern Illinois District, and the testimony, as I understood Mr. Nugent to talk of it and perhaps some of the other people as well, suggests there were special reasons which would account for that kind of overlap.

[2227] Q You are referring, just for purposes of the record, to Government's Exhibits 88 through 90, that is the list of common customers or of known common customers?

A I was referring generally, but I have in mind that list of common customers which as I recall it, purported to identify the common customers.



When I looked over that list, outside of Commonwealth Edison which was an important customer of both companies, a company which the record clearly shows purchases heavily in the Fulton-Peoria area, in the Belleville and Southern Illinois—

Q Southern Illinois?

A Excuse me, in the Springfield District in those three areas.

Outside of that many—although I would have to go through the list to detail it—of the apparent customers reflected a somewhat different product in this use of dust—are reflected in some cases, as I recall, clearly complementary shipments; shipments for example, I believe on a Freeman contract by United to TVA that was discussed at some length in the record and appeared to be clearly a shipment that was made on the Freeman [2228] contract at the time when the river was closed, so that the coal could not go up and it was done to keep the United mines operating. Clearly, it's the common customers that received a good deal of attention in the record and I have read that record with some interest.

Q Based on all of that then, Dr. Steiner, what is your opinion in terms of the existing mines of United Electric and the reserves of those mines, and assuming that they are all free, and not already committed, what is your opinion with respect to the competition, actual or potential or lack thereof, between Freeman and United Electric?

A To be sure I understand, you are asking me to what extent do I think that the coal in the Freeman area, the coal in the United area, the area of the United mines are—if we assume it is available—are available to the same customers?

Q Yes.

A And I would say on the basis of this evidence, and if the structure of transportation rates and quality of coal continues in the future as it has in the data we have, they appear largely to be non-overlapping for this group of customers.

[2229] Commonwealth Edison clearly is taking coal, to some extent, from both companies by virtue of its pur-

chases in both the Springfield area, from the Crown Mine, and also from both Fulton-Peoria and Belleville.  
 [2230] Q Do you have, Professor Steiner, with you a copy of Defendants' Exhibit 237?

A Yes, I do.

Q For purposes of the record, this is an exhibit of four pages containing four tables, the first of which is entitled "Fraction of Total Illinois Production of Leading Companies other than Peabody;" the second of which is entitled "Average Production per Company, Illinois Production of Illinois Producers;" the third is entitled "Changes in Concentration in Illinois Coal Production since 1959, two measures"; and, the fourth and final is entitled "Changes in Concentration in Illinois, Indiana and Western Kentucky since 1959, two measures."

Did you prepare these tables, Professor Steiner?

A Yes, I did.

Q And on what are these based?

A They are based entirely on the Government exhibits as they are listed and my puzzling through those exhibits although as I indicated earlier, I didn't find the Government exhibits answered all my questions, I thought they might answer some of my questions or some questions and in particular I had some reservations about the definition of product and the inclusion of both [2231] metallurgical and other coal, and so on.

It seemed to me that they might reflect something of the changes over this period from '57 to '67, and particularly they might reflect something to me about the behavior since 1959 in terms of whether the control by Freeman of United Electric, which I date to have taken place in 1959, to see what effect if any, one could see in the concentration as measured by this set of indices, what change had occurred over the 10-year period. Thus what I am saying here is I was trying to take not as indications of the level of concentration for reasons I have indicated earlier, but as some clue to the trend in concentration and see what, in fact, had happened.

[2232] Q Directing your attention to page 1—

A Yes.

Q —I wonder if you would explain, please, what that table shows in your opinion?

A Well, as I said, I think earlier I was struck when I began to look at the list of mergers that were prepared, how importantly Peabody had figured in those mergers.

Q May I interrupt just a moment?

A Surely.

Q When you are referring to the data prepared with respect to mergers, are you referring to anything other than the Government's information and exhibits with respect to coal mergers, which I believe is Government Exhibit 87? Are you referring to the evidence?

A I don't know the exhibit number, but it's the Government exhibit listing the mergers and the acquisitions by companies, showing the acquiring and acquired companies, number of tons and coal and the date that I was concerned with.

In any case, my first intention was concerned with the importance of Peabody in those mergers; and my second, as I looked at that series of exhibits dealing here with Illinois, Exhibits 62 through 72, was the fact [2233] that in the Government statistics the merger between United and Freeman was effectuated in the statistics as of 1967, and this gave a substantial increase in the apparent concentration figures as of that date.

What I first did was to recompute the figures effecting that merger, that is, combining the production—these are production figures—of United and Freeman as of 1959.

Q These are production figures again from the Government's exhibits, is that correct?

A These data are all taken directly from the Government exhibits.

In some cases the percentages may not be the sum of the percentages because I added the actual tonnages, and divided, and I may have made an error.

The computations were made by me. I have checked them. I believe them to be accurate, but although I have here a record, these percentages are in each case computed by taking the aggregate production and dividing it by the total.

In any case, this first table attempts to look at the fraction of total Illinois production by what would be the two largest, the four largest, the six largest and the eight

largest producers then substrating [2234] out the largest, which was Peabody, so that we could look at the merger trend, Peabody's acquisition, and by this horizontal line drawn between '58 and '59 effectuating that merger in the statistics, for statistical purposes in 1959, what it shows, I think, if you look at it.

Q May I ask this one introductory question before you state that?

A Surely.

Q The title, Freeman, on the second column from the left, that is just so that we are clear, this includes United Electric after 1959?

A That is correct, and Freeman is merged in my statistics here in the 1959 statistics, arguably that perhaps should have been done in 1960 if October '59 was the date, and in any case—

Q Please continue.

A Excuse me.

Q Please continue. I am sorry.

A What that appears to me to show is how remarkably little, if you like, the market share of these groupings have increased over that 10-year period.

We can see that again in more detail on the third page of this, by just running through it, Freeman, in fact, if you take this definition, has a smaller share [2235] of the market in 1967 than it had in 1959.

The second, third and fourth producers went from 42 percent to 44 percent, over that period.

The top six producers—the second through sixth—missing Peabody, went from 54.7 to 57.8, and so it goes. In other words, remarkably stable percentage shares of Illinois production.

Now, again reserving that I do not really think these are concentration ratios, because I do not think they are in a well defined market for reasons perhaps that show on those maps as well as anything else. That is what this, I think, this table shows.

It also shows between 1958 and 1959 what is the statistical affect of the United-Freeman merger if one effected it as of that date.

Now, it's of course very difficult where you have that period of rise and control to date precisely when statis-

tically the merger should have been effectuated but October 1959 seemed to me the most reasonable date.

Perhaps, Mr. Hedlund, if we turned next to the third sheet, which looks really further at this experience since 1959, the third page, I will come back to the second, the Government in one of its exhibits, perhaps it was No. 70—I don't remember the number—gave a—that showed [2236] the production of the top two, the top four, and the top ten companies—those Government statistics for these years '59 to '67 are given in the first column of each of the three banks of these three groups of this table.

[2237] I have here picked '59 to '67 because I was particularly concerned with the question, really, as to what if any triggering effect the United-Freeman merger might have had on concentration in the industry, and taking again these figures, not as absolute indications, but as indications of trend.

For example, if we look at the production of the top two, according to Government statistics, it appeared that that had risen from 36.2 percent of the market to 52.9, a total change of 16.7 points, a very substantial percentage increase of the 36.2 in 1959.

The adjustment in the next column consisted merely of effecting that merger not in 1967 for statistical purposes but in 1959. That reduces that 16.7 increase to an 8.7 point increase.

Immediately below that you see that Peabody's increase in market share was 10 points. This, in fact, largely, I think, explains, is explained by Peabody's mergers, these data, I should say, assumes still as within Peabody the tonnages that have been since ordered divested by that other case, so that this has no effect for the subsequent divestiture that might have been made. But that's with respect to the top two of what I believe to be correct, an increase of 8.6 percent—10 percent [2238] more than all of it was accounted for by growth in Peabody; a loss of minus 1.4 by the second company, which of course, was Freeman.

In the second column, the second bank there dealing with the top four, the apparent increase of 20 points in the concentration ratio from 55 to 75.2 reduces to 12



points when one make the merger effective in 1959 as distinguished from 1967, of those 12.1 points, 10 again, the same 10 again are accounted for by Peabody.

This makes the change in concentration due to the activity of the other three, up here, to be relatively modest.

With respect to the top 10, and it was the Government, I might say, who chose 2, 4 and 10 as an appropriate groupings, the changes are less dramatic, but there indeed it turns out that the second through tenth company decreased 1.3; the total increase is 8.7, being more than accounted for by the increase in Peabody's market share.

So it seems to me that those two changes, that is, one effecting the merger date, but I think more realistically, affects the change in control as an economic matter; second, removing Peabody suggests no trend in concentration in Illinois on these statistics as a result of the Freeman-United merger.

[2239] While we are, I did not—I've done on the fourth page here a similar analysis for the three-state area; Indiana, Illinois and Western Kentucky.

Once again to abbreviate this discussion, you will notice that with the production of the top two an apparent increase of 15.5, reduces to 10.7 when you adjust it for the merger. Of that, 12.2 is accounted for by Peabody. Thus, Freeman, the second largest firm and I guess it's not—I don't remember whether Freeman was in every year the second largest firm in that three-state area—that can be checked.

In any case, the top two, their per share decreased. The top four, absent Peabody, their share was roughly constant,—0.8 percent change, which is hardly significant; and the top ten did in fact increase by 5 points; but of the total increase of 17.5, the great bulk again was Peabody.

What I think this suggests to me, those three tables together, suggests that very largely the change in the concentration as measured by the Government and as included in these is partly what I regard as the statistical change, as I would see it, dating of the merger in 1967 instead of—in 1967 [2240] statistics instead of the

1959 or 1960; and second, the very large increase in market share of Peabody.

So, I turn to the second table which really looks at a rather different issue.

You recall that most of those Government statistics, year after year, defined certain leading companies, leading companies in the Illinois statistics were defined as companies with production of 300,000 tons or more in the year in question, and having run down that list there would then be a list of the remaining companies, and we saw that that number of remaining companies declined from something like a hundred-odd down to 29 or 30, as I recall, by the end of the period and I was really rather curious as to what we could find out about the size of the companies that were not specifically listed.

What I did was to compute—and this is really the right-hand column of the second page—I simply took the total tonnage attributed to these non-leading companies and divided by the number of them to find the average tonnage per company.

Now, if you realize that the tonnage that was possible was anywhere between one ton and 299,000 tons, one would expect if these companies were [2241] evenly distributed in that range to find an average somewhere in the neighborhood of 150, 100, 150, 175 thousand tons.

As you will see, those tonnages are very much smaller, which suggests and re-enforces the kind of impression I already had had, that these other than leading companies were in very large part, very small companies indeed, and they were not really in the same kind of market, in the same kind of situation as the big companies.

It is not surprising to me that they, as their market, as I would see it, their market being very largely the spot market, that with this kind of production they were not in position to deal in the utility market nor indeed to be very attractive merger bait for a larger company. There simply was not that much production at stake.

We don't have records or I don't have records of what happened to each of those companies, but I think that this re-enforces the notion that they disappeared.

[2242] One thing I think is of some interest in looking at that, the average size of those companies has increased

somewhat over the years in '57, '54, '57, up to '65, '66, '67. That suggests that even in that group of companies under the 300,000, the attrition appears to have been greater in the smaller companies within that group.

In contrast, if you look at the other side, you see the phenomenon we referred to this morning; the large companies are not only large compared to the dogholes, but they are getting larger over this period. They are getting larger in part, as we saw, because they are dealing with bigger mines, and, of course, included in these things are the facts on such mergers that have occurred and of the Peabody mergers in particular.

Again, in the statistics I have made certain assumptions that had to be made with respect to the Government statistics. I have assumed that UEC and Freeman were merged in 1959 for statistical purposes; this affects not only the tonnage, it affects the number of leading companies, so that when you compute an average you are dividing by a different number than what would otherwise be the case.

I also assume that CW&F was in fact a part of [2248] Freeman in 1957 and in each subsequent year. I think there were two versions of the table of the exhibit I had, and one could go either way as to assume that was merged or was not. It seemed to me from what I knew of it, it was best to assume the merger.

Q Now, Professor Steiner, I would like to turn to your opinion of the effect of the merger of United Electric and Freeman on competition in the markets that we have been discussing.

I want to ask you whether there are a number of factors important in your judgment in considering your decision in making such an evaluation and again with specific reference to Freeman and UEC and if you feel them to be important why.

The first factor I would like to ask your opinion as to whether it is important in making this assessment of the effect of the merger is the nature and the size of the buyers involved.

A Yes, I believe it is important.

[2244] Q Could you tell me why?

A Well, I think when you are discussing a transaction in which a large buyer is devoting his executive talent to the purchase, there is likely to be a degree of market power perhaps, and market wisdom, certainly, that clearly gives for a large buyer and an informed one some protection against being misled and being taken advantage of in any way; thus other things being equal I would think large buyers buying large quantities of coal being well-informed would increase the degree of competition in a market.

Q Secondly, I'd like to ask you what the factors relating to the way in which these purchasers buy coal is necessary to consider in evaluating the effects of this merger?

A By the way in which—do you mean the long-term contracts, the large purchase, or do you mean the fact that these are negotiated contracts for which they take bids, and so on?

Q I mean both.

A Well, I think each is important. I think it's very clear that when a company is making a purchase of coal, let's say for a million tons a year for 20 years, committing themselves to a very substantial [2245] expenditure of funds and indeed often building a boiler to utilize this coal, it suggest that this company will search among its alternatives fully, will explore the possibilities fully, that these things, other things being equal, will tend to give a degree of competitive rigor to the buying side of this market that will put great pressure for conforming with its promises on the seller.

I think secondly the fact from what I understand about it, the procedure of seeking bids, of specifying quantities, of really discussing, not only this fuel of this coal producer as against that coal of that coal producer, but considering as well alternative sources of energy, if one is talking about utility purchases.

Each of these things adds to the degree of pressure on the buying side of the market, and thus other things being equal, adds to the competitiveness of the market.

Q Then taking the next one, do you believe that in evaluating the merger before us that it is necessary to



evaluate the degrees of actual and potential uses of other forms of energy?

A Yes, I do. It seems to me, given the facts [2246] in this case and the testimony of various people, particularly the evidence with respect to TVA and Commonwealth Edison, the fact of nuclear as a substitute for coal in the future, seems established. At what rate that will occur, clearly is a function of relative costs, and of air quality control things. But it seems to me that one must take those into account. It seems to me one must take into account at the present the influence of other forms of fuel, such as gas, and oil.

As I recall, Mr. Corey who testified that approximately a third of their power at certain stations was now being supplied by gas.

In any case, we have had testimony from a number of users that gas is currently playing a significant role.

I take it that residual fuel oil may in the future play this role. To the extent it does, it clearly, it exerts competitive pressure on the market in which coal producers sell their source of energy.

[2247] Q Do you believe, again, in attempting to make an assessment of the effect of this merger, do you believe it necessary to consider the characteristics of the coal producers other than Freeman and United Electric, and, if so, why, and which characteristic?

A Yes, I do. I think that we have here, and it's important that we have here eight or nine substantial companies, or ten, I don't remember the number, producing coal for this market, some of whom are—the number varying—are in a position to bid for demands for coal, requests for bids for coal, for these things.

We have a situation where there are a—I think one witness—I don't remember who it was—spoke of an ample number of companies producing coal, a substantial number of sellers here, is clearly of some interest, is of some interest to me and I would say that other things being equal, having this record of a substantial number of strong companies is a pro-competitive factor in this market.

Q What about reserves of those companies?



A Well, I think that—something that I have been implicit in all my thinking—perhaps I haven't said it as explicitly—we are talking here not about—if we are talking about competition, not about produc- [2248] tion on past contracts, but about the negotiation of future contracts, of contracts for a new production. It is clear that a company, what it has to sell is reserves not previously committed and thus if it is, as the evidence in the case suggests, it suggests to me that United has a very small quantity of uncommitted reserves, then in that case it has a small effect on the market with respect to the use of those reserves, and thus the reserve position is important in the sense that a company, in order to be an effective force, must have sufficient reserves to credibly bid on contracts demanding large quantities of coal.

Q Again, with reference to the evaluation of the merger of Freeman and United Electric before us, is it necessary in your judgment to consider the characteristics of the coal that they sell or each of them sells, or indeed as well the characteristics of the coal sold by other producers?

A Well, yes, I think it is. I think that if one is talking about the sales of coal to an existing facility, the evidence suggests that those facilities, the boilers are designed to utilize coal with certain specifications and within certain limits.

It is quite clear from some of the evidence [2249] that the northern Wisconsin utilities that use high BTU coal were not in a position to use low BTU coal, and so on.

It is clear looking at the statistics that we have that the characteristics of the different coals, different regions, vary substantially, vary in BTU content, in moisture content and in other ways, in sulphur content. I expect the sulphur content may turn out to be a very important consideration and an increasingly important consideration in the future.

[2250] Q You have touched on this briefly with reference to the actual or potential uses of other forms of energy, but I ask you whether again in evaluating the impact of the merger you believe it is necessary to consider the environmental considerations or the air pollu-

tion problems about which there has been such a great deal of evidence?

A Yes, I think I have spoken to this, but let me briefly summarize it.

I think that air pollution considerations are going to make more difficult coal's role in the future. It seems perfectly clear that we are suddenly taking very seriously the matter of air pollution, and that air pollution control regulations will be enforced and that the coal users will either have to find substitutes for coal, find ways of finding a low sulphur coal or will have to introduce techniques for eliminating the sulphur dioxide and other pollutants that come out. None of these, as I suggested earlier, is going to be costless, and by virtue of being costly they are going to make the marginal consideration, let us say, between nuclear and coal closer; for a facility that is not close today, it will be closer tomorrow in my view because of this factor.

[2251] It is a disadvantage under which producers who have high sulphur coal reserves are going to overcome, if they want to sell their coal.

Q With reference to your evaluation, again, as an economist of the impact of the merger between Freeman and United, do you believe that it is necessary to consider the location and the quality of United Electric's reserves?

A Well, I think it's necessary to consider all three: the location, the quantity and the quality.

It is perfectly clear, we have talked about quality, and we have talked about quantity, and that the maps have indicated, the statistics indicate that transportation is a very important cost of the delivering of coal and that, therefore, location is a very important part, and I wouldn't say the most important but a very important aspect of that along with the quality of the control—excuse me,—the quality of the coal.

Q Do you believe it's necessary to consider in your evaluation as an economist the degree of or a lack of United Electric's capability to become a deep coal miner?

A Well, I think that—yes, I do—and I think that is because it relates directly to the reserve issue.

If United does not have sufficient reserves [2252] to be a competitive factor in these markets, one way in which it might be a competitive factor would be to acquire such reserves.

If it lacks underground mining capability, that way is closed to it, and, therefore, it is an important factor in the evaluation.

Q Finally, Dr. Steiner, in your evaluation do you believe it is necessary to consider United Electric's likely success in attempting to acquire additional economically mineable strip reserves in locations meaningful to the market that we have discussed?

A Oh, yes, I do. Obviously, once again, a way for it to overcome its lack of reserves would be to find more reserves, if there are such reserves to be found. If they are not to be found, that is an important factor in evaluating its competitive position.

MR. HEDLUND: Your Honor, I believe I can finish in about 15 minutes if you can go a little bit late.

THE COURT: All right. You may proceed.

[2253] BY MR. HEDLUND:

Q Professor Steiner, considering all of these factors that I have mentioned and even if you will, factors that perhaps I have not mentioned, what opinion, as an economist, have you reached with respect to the effect on competition in the markets we have discussed of the common ownership of Freeman and United in the past?

A Well, as I think I suggested to you for the purpose of this question at least, in my own view, that this merger has been in effect now for a decade.

Looking at the statistics of this from '59 to '67, and the statistics of the industry over this period, it seems to me to have been a highly competitive industry in its performance and its ability to achieve low prices to respond quickly to a massive set of challenges on it.

It seems to me that the health of this industry is very good in this period, and I would say there has been—that I can find no adverse effect on competition of this merger over this period.

MR. CUSACK: Your Honor, for the purposes of the record, I would like to move to strike the last answer on

the grounds of the Supreme Court decision in the Von's [2254] Grocery case, just for purposes of the record.

THE COURT: All right. The record may so show.

MR. CUSACK: And Pabst and others.

THE COURT: All right.

BY MR. HEDLUND:

Q Considering the factors again that we have been discussing, Professor Steiner, I would ask your opinion as an economist as to the likely future effect on competition in the markets that we have discussed of the continuation of the common ownership of United Electric and Freeman.

A Well, in answering that question, let me make clear that I am assuming, as I believe that United currently has all but a very small portion of its reserves committed to existing contracts, that it is unlikely to acquire large quantities of mineable strip reserves.

Under the circumstances, I believe the continued joint operation is likely to enhance competition in the coal industry because I think it will make for an efficient utilization of the remaining reserves of United in conjunction with the back-ups of Freeman and potentially in terms of utilization of joint efforts of the two companies, so that I think without additional reserves that it can mine it would not be a competitive factor at all, [2255] I think that its reserves, its existing reserves, will likely be effectively utilized under the continued joint ownership. I see no adverse competitive effect.

Q Finally, Professor Steiner, what opinion have you reached as an economist with respect to the likely effect on competition in the markets that we have discussed that would follow from a divestiture from Freeman-General Dynamics of the coal properties and of the company itself, United Electric Company?

A May I ask you in that question, do you assume that where this company has current contracts that include a back-up guarantee by Freeman that that back-up guarantee would continue or would that be removed?

If it were removed, I think there would be some question as to whether it could fulfill even its present contracts, but I can discuss that either way.

[2256] Q I would like you to do that. Would you discuss it both ways?

A I think without such back-up it might well be in serious trouble even in meeting its current commitments.

I am not a lawyer, I don't know the consequences that would follow, what would happen with respect to these existing contracts.

It would clearly, if I understand the record, not be in a position to bid in a substantial way on even one more, if I understand, the nature of its mineable reserves, on one more utility contract because it simply could not give the kind of guarantee of performance, does not have the reserves, and it would not appear to be a credible supplier, on even one more contract.

It would therefore seem to me at best to be a company that was attempting to do its best to liquidate its existing commitments, it would not be a pro-competitive force.

If it had sufficient reserves, let us say, due to back-up guarantees, to commit to its existing contracts, the situation would only be changed in the sense that it would have perhaps no difficulty in [2257] meeting those commitments but still would not be able to enter into additional contracts unless it were in a position to find additional mineable reserves which it had the capabilities of mining. I don't know.

There is one other factor in this that I do not know about. As I recall all of United's coal or virtually all of its coal is high sulphur coal. What will be the status of its contracts, long-term contracts, if sulphur control legislation comes in, I do not know. I do not know. Is this the responsibility of the utility or of the coal company, whether this will void its contracts, and so on?

But it seems to me that is an aspect of the problem that I should think would be unpleasant for The United Electric Coal Companies in the future.

It will be in any case, but it will particularly so standing alone.

MR. HEDLUND: May I just have a moment, your Honor?

THE COURT: You may.



MR. HEDLUND: Your Honor, that is all I have.

THE COURT: All right. We won't start you on cross examination, Mr. Cusack, unless you are in such a hurry to start.

[2260]

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

No. 67 C 1632

UNITED STATES OF AMERICA, PLAINTIFF  
vs.

GENERAL DYNAMICS CORPORATION; THE UNITED ELECTRIC  
COAL COMPANIES; and FREEMAN COAL MINING COR-  
PORATION, DEFENDANTS

Before HON. EDWIN A. ROBSON, Chief Judge,  
Tuesday, April 21, 1970,  
10:40 o'clock a.m.

PRESENT:

MR. JOHN THOMAS CUSACK,  
MR. ROBERT L. EISEN,  
MR. RONALD L. FUTTERMAN,  
MR. HUGO SIMS, and  
MR. RICHARD J. BRAUN,

appeared for the Plaintiff;

MR. HAMMOND E. CHAFFETZ,  
MR. REUBEN L. HEDLUND,  
MR. DONALD G. KEMPF, JR., and  
MR. RICHARD H. IRVING, III,

appeared for Defendants.

ALSO PRESENT:

MR. CHARLES BANE,  
MR. JOHN SARBAUGH,  
MR. JAMES M. FOLSOM.

. . . .

[2272] MR. CUSACK: Your Honor, at this time the Governments moves for the admission into evidence of the deposition of Dr. Steiner, which I took last October, together with the deposition exhibits in that deposition.

THE COURT: Any objection?

MR. HEDLUND: No, your Honor. I believe it is already in.

MR. CUSACK: It isn't.

THE COURT: It may be admitted.

(The deposition and deposition exhibits of Dr. Peter Steiner were received in evidence.)

#### PETER STEINER,

called as a witness by the defendants, having been previously duly sworn, was examined and testified further as follows:

#### CROSS EXAMINATION

BY MR. CUSACK:

Q Dr. Steiner, you have testified in regard to some national statistics prepared by Bruce Netschert, is that correct, in regard to the coal industry?

A That is correct.

Q Is it your opinion, Doctor, that there is such a thing as a national coal market?

[2273] A No. I believe there is a national coal industry.

Q There is an industry?

A There is a producing industry, and statistics are published by the Bureau of Mines with respect to all American coal producers.

Q In regard to the industry, this is a recognizable industry, with its own trade associations, and so forth?

A Yes, there is.

Q Getting back, sir, to the national coal market—perhaps it would be easier for everyone if we could use Defendants' Exhibit 144—glancing at that, sir, if I can assume that there is no national coal market, which is your testimony—is that correct?

A Would you complete the question?

Q There is no national coal market, correct?

A I think not, but, as I said yesterday, I believe that markets are defined in the context of some question. There may be a national market for coal mining equipment, for example, which is sold to coal mines, something of this kind.

\* \* \*

[2275] Q Directing your attention to the map of the United States as set out in DX-144, could you tell us, if you know, whether there are any regional markets contained in the nation for the production of coal?

A I think that map reflects the service areas of certain coal consumers and also consumers of other fuels. I don't think that map goes to the question of what is a coal market. I think we have testified, I have testified, to the fact that looking at some of the consumers of coal in this Midwestern area, I think it is possible to define markets for them.

Q What I am asking you to do is to look at the map as an outline of the United States, the Continental United States. You can either ignore or mention the various colors on this map which are the service areas of the public-owned electric utilities. But just having general regard to the map of the United States, could you tell us if you have reached any conclusions in regard to regional markets for the production and sale of coal throughout the country?

A I have not come to conclusions about regional markets. If you look at the map immediately behind you, I have there talked and did talk yesterday about what seemed to me to be definable markets for the sale [2276] of coal.

Q Other than your definable markets based on the freight rate districts in Illinois, which is what this map is talking about, is that correct, sir?

A Could I have that question?

THE COURT: Read the question.

Q (Read by the Reporter.)

## BY THE WITNESS:

A I think that is not correct. I think those are based on the analysis of data with respect to both consumption and production of coal, so I paid attention to the identity not only of the location of producers, but also to the location and purchasing habits of customers.

Q All right. Other than that map which you discussed yesterday, the overlay map, having reference to the map of the United States, have you reached any conclusions in regard to any other areas in the country which could be considered proper economic markets for the production and sale of coal?

A I have not analyzed any other markets, Mr. Cusack.

Q Thank you. Would you assume that there are other markets, other economic markets.

[2277] A Yes, indeed.

Q For the production and sale of coal?

A Yes, indeed.

Q It would be something less than the United States, would it not?

A I would be very surprised if for any purpose whatever it made sense to talk about the United States as a whole as being a sensible economic market with respect to coal.

[2287] Q From the period of 1959 to '69, would you have considered United Electric, or do you consider United Electric to have been a substantial coal producer?

A A substantial coal producer, yes.

I do not, if I may just—I do not, over that period, consider it to have been an independent substantial producer, because it is my view, as I expressed it yesterday, that from October of 1959, on, it does not make sense to treat it as if it is an independent coal producer, but that it was effectively under the same control as that of the Freeman Coal Company, so that from my point of view it seems to me that its operations should be looked at in the constraint of which I think was the effective control of its operations.

Q In regard to that, sir, is it your reading of the record that the Directors of United Electric, from 1959



to 1966, when United Electric was merged into General Dynamics and became a wholly-owned subsidiary of General Dynamics, is it your reading of the record that the Directors ran United Electric for the benefit of Freeman and General Dynamics?

A No, sir.

Q Professor, would the future viability of [2288] United Electric in your opinion depend decisively on its coal reserves?

A It would depend—perhaps I can have that question read back.

THE COURT: Read the question.

Q (Read by the Reporter.)

BY THE WITNESS:

A If by "viability" you mean its ability to continue selling coal to customers on contracts, it would depend decisively either on its uncommitted reserves or on its ability to acquire mineable additional reserves.

That is perhaps a definitional answer. I would define "viability" in the market sense as its ability to engage in market transactions. And in that sense clearly what it has to sell, in my view, is reserves, which it either might have or might potentially acquire.

Q Your answer then to my question is "yes"?

A Perhaps if I am to give a one word answer I could have the question re-read.

THE COURT: Read the question.

MR. HEDLUND: Your Honor, I'm going to object. I think the witness has answered the question.

\* \* \*

[2304] Q And may that also be available to consumers within the Springfield District?

A I think if you are telling me that there is coal of the same general location as the Crown Mine, let's say, in the Springfield District—

Q No, sir. The Crown Mine is at Farmington, which is here (indicating). The Menard, Cass, Morgan, and Sangamon areas is here (indicating). Springfield is there, really between them.

A I am sure there are some, if there were this coal—I am sure there were some consumers of coal to the east of that whole area that you described who would find it possible to utilize that coal. When I say I am sure of that, I would suspect that would be the case. Where they are located or which facilities you are talking about, whether you are talking about utility coal—I think one of the major utilities in that area has a minemouth plant, if I recall. Presumably that coal would still not be competitive with the minemouth plant.

But again I think I need more information, and even with more information I perhaps need more expertise to decide who would be the potential customers of that mine.

[2305] As I think we know, finding which contracts a coal company can bid on requires a good deal of sophistication on the part of the coal mining company, and knowing which coals it can use requires a good deal of sophistication on the part of the purchasing company. I have neither of those sets of sophistication, so I feel at a great disadvantage.

Let me say this: that the statements I have made about markets and market areas have been based not on my knowledge of the inherent logic of certain transactions, but on the basis of the analysis of data that has been made that shows which coal actually goes to which locations. Therefore, it is revealed marketability as distinct from theoretical marketability.

You are now asking me where coals might go, and I don't really know that of my own expertise.

Q Yes. And your overlay chart, then, is it fair to say, is based on 1967 statistics, is that correct?

A Was that the year of the statistics? Whatever the year of those subpoenaed statistics was. Was that 1967?

MR. HEDLUND: We will stipulate that refers to [2306] 1967.

THE WITNESS: Yes.

MR. CUSACK: Thank you.

BY MR. CUSACK:

Q So that would not, sir, account for any shipments from the Carlinville Mine of Humble Oil, the Crater Coal Company to the Powerton Plant at North Pekin, is that correct, sir?

MR. HEDLUND: May I have the question, your Honor?

THE COURT: Read the question.

Q (Read by the Reporter.)

MR. HEDLUND: Your Honor, I don't understand what Mr. Cusack is referring to when he says, "Well, that would not account for—".

THE COURT: Are you objecting?

MR. HEDLUND: I am objecting.

THE COURT: Clarify your question.

MR. CUSACK: Yes, your Honor.

BY MR. CUSACK:

Q The overlay map which we have been discussing, sir, which Mr. Hedlund has testified is based on 1967 production, and the markets set up in the overlay map as well as in the DX-55—is it true that that information would not take into account shipments from [2307] the Carter Coal Company mine at Carlinville, Illinois, in Macoupin County, to the Powerton Plant of Commonwealth Edison at North Pekin?

A I do not recall that there were any such shipments in 1967.

[2308] BY MR. CUSACK:

Q There were none.

A None that I know of.

Q But you do know there was a contract, do you not, for coal to come from Macoupin County to the Powerton plant of North Pekin?

A Yes. I think I remember reading about an agreement, but whether the contract—I haven't read the contract.

Q The evidence in this cause shows that not only Humble Oil, Carter Coal Company, but Freeman owned substantial reserves in Macoupin County. The evidence

also shows that the Macoupin County reserves of Humble, at least some of them, will be sold to the Powerton plant of Commonwealth Edison at North Pekin.

Where would you estimate or would you believe the Macoupin County reserves of Freeman to be developed in the future would be destined?

A I don't believe I can answer that.

Q It is unknown, isn't it?

A It is unknown to me.

Q And you wouldn't know, sir, either, would you where the coal which underlies Cumberland, Coles, Clark and Edgar Counties will go when it is mined, if [2309] it is mined?

A I don't remember in the record sufficient discussion of those coals for me to know enough about their quality or quantity, nor do I know enough about the transportation to make a sensible statement as to where I predict they would go if and when mined.

Q There is evidence in the record, sir, that the Freeman Coal Mining Company is developing at this time its Orient No. 6 mine in the Southern Illinois freight rate district.

A Yes. I am aware of it.

Q Is there any evidence, sir, where the coal mined from the Orient No. 6 mine will be sold?

A Well, it would be my expectation, since, if my recollection is correct, the Orient No. 6 mine is very much like the Orient 3 and 4 mines in its low sulphur properties, and so on, that it would have very much the same potential markets that Orient 3 and 4 mines have, but I could be mistaken on that. My recollection on that testimony is that this is high BTU, low sulphur coal, that it has available to it the same kind of transportation facilities that the Orient 3 and 4 mines have, and therefore I would think without really remembering that it would have very similar conditions of marketability.

[2310] Q I would like to now go through with you, if I may, with the leave of the Court, DX-55.

May I have a copy for the Court?

A I will need a copy as well.

MR. CUSACK: Just a minute, please.

May I approach the witness, your Honor?

THE COURT: You may.

THE WITNESS: Thank you for the copy.

MR. CUSACK: Yes, sir.

MR. HEDLUND: Your Honor, can we have just a moment while we get our third copy?

THE COURT: Yes.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

BY MR. CUSACK:

Q I would like to go over the DX-55 first with you, Mr. Steiner, Professor Steiner.

First of all, I would like to just establish that the overlay maps that you have been discussing here yesterday with the Court, these maps are based solely on DX-55; is that correct?

BY THE WITNESS:

A That's correct.

[2311] Q And these figures are for 1967?

A Yes.

Q Directing your attention, sir, to Table D-1F, which is the first page here, the utility facilities as located at the Fulton-Peoria sales area, the eight facilities set out under Arabic figure 1 on the first page, this area is not the same, is that correct, as the next page that is Table D-2F, under Arabic 1, the Commonwealth facilities in the Fulton-Peoria sales area; is that correct?

A The areas are not exactly the same I think that is shown on the maps. That's correct.

Q It is fair to say, isn't it, that the known utility facilities in the Fulton-Peoria sales area are much broader than the area encompassing the utility facilities located in the Fulton-Peoria sales area?

A More widely dispersed. I think the utilities are all river stations.

The non-utilities, which involved this list of companies that are there listed, were not all river stations, and



therefore the area that encompassed that volume of sales was a larger area physically, that's correct.

Q And is it true, sir, that in the non-utility [2312] facilities, the sales area as set out at Table D-2F starts with Clinton, Iowa, and ends up with Dixon, Illinois, and isn't it true that there are utility stations located in these very cities?

A There may be. I simply do not know the location of utility stations in Illinois that well, or in these other cities.

Q Well you do know that the Powerton Station of Commonwealth Edison is at Pekin? You know that, don't you?

A Yes, I remember that now.

Is Pekin in this?

Yes, I see it is.

Q And you know that there is a utility station at Clinton, Iowa, don't you? You recall the testimony of the man from the Iowa utility?

A What was his name? Excuse me.

Q Mr. Steele.

A Mr. Steele? If he so testified there is, I'm sure there is a station at Clinton, Iowa.

Q Directing your attention to the first page of this exhibit, Table D-1F, sir, how do you account for the fact that 316,000 tons of coal produced in the Belleville District were consumed by utility facilities [2313] located in the Fulton-Peoria sales area, that is, the facilities of the three companies under the first paragraph, first numbered paragraph?

A Well, I think that—I don't know, without looking at the underlying data, precisely which facility was receiving that shipment of coal.

It would not surprise me in general if I defined two market areas. And if you will visualize those as circles on the map, there might be some station that was in a position to receive from either of those two areas.

I think Belleville coal is, in general, river coal, the coal that can come up the Mississippi River, can fork and go up the Illinois River. And it is possible, though I don't know, that this is the station where coal has

come down river from the Fulton-Peoria mines, and up river from the Belleville mine. And this could well account for it.

I assume that is one possible explanation.

Another is that these may be shipments or contracts signed at different times, and that the particular economics of purchasing coal for a particular station could account for it.

Without going back to the underlying data, [2314] I don't think I can discuss it, discuss it in more detail than that.

[2315] Q Dr. Steiner, Nugent Deposition Exhibit No. 38 shows that the Peabody Coal Company operates the Mecco mine, Mine No. 28 in Knox County.

In which of your districts is the production of the Mecco mine assigned, having reference to your overlay map?

A I think the overlay map did not attempt, Mr. Cusack, to analyze the sales areas for each of the producing mines, or each of the producing districts in Illinois.

It attempted to look at the four producing districts that included the mines of United and Freeman.

Q The Elm Mine of Peabody, is that located in your Fulton-Peoria district?

A If it is in the Fulton-Peoria district, its tonnage is included.

Q Did you take into account the deposition testimony of Mr. Morrison of the Wisconsin utility headquartered at Green Bay in regard to the unit freight rate from the Elm mine, and the shipments of coal from the Elm mine to the Sheboygan, Wisconsin,—

A When you say did I take into account, are you asking me do I remember that testimony?

Q Do you recall that?

[2316] A I'm sure I read it, but I don't recall it at this moment.

Q Having reference to your overlay map and your Fulton-Peoria sales area, if over a million tons of coal a year were moved from the Elm mine of the Midland Division of Peabody Coal by rail on the Chicago North Western to Sheboygan facilities of the Wisconsin Public

Light Company or the Wisconsin Power & Light—I don't remember which—would this somehow affect—would you consider it would be the geographic market for your Fulton-Peoria area?

A Well, there are two things I want to say.

One, in the defining of these market areas it was too much to hope, too much in general to expect that one could account for every ton of coal going out of a particular area to every producer.

On the other hand, in this Fulton-Peoria utilities statistics, as here shown in this exhibit, I do not see any tonnage that is sold out of the Fulton-Peoria area that is going to a facility or utility facility in Wisconsin.

If what you say to me is correct, then there appears to be some kind of a discrepancy between your fact and this exhibit.

[2317] As I think I said to you, I did not, myself, prepare these exhibits. I discussed at some length the theory under which they are prepared. And I think I have every reason to believe that they are accurate.

And I'm puzzled by your example.

Q You did read the deposition of Mr. Morrison, though, did you not?

A Yes, I did. I read all of the depositions, but I simply don't have all of them at my fingertips.

Q And directing your attention, sir, to Table D-1F, is it a fair statement to say that 63 percent of the total coal production in the Fulton-Peoria freight rate district is sold to Commonwealth Edison Company?

A Well, with a couple of minor deviations I think that is what this table shows.

I think that the statistics here, as they were collected, didn't report actually on every ton of coal produced, but only shipments of 20,000 tons or more from specific mines.

These data, as I recall, were developed from the customer reporting questionnaire.

There is a similar table based on the Government's producer shipments. I also looked at those tables. They show very similar, though not identical numbers.

[2318] But with that qualification of the definitions of the coal that is here reported, this appears to say that

63 percent, 3,855,000 tons, was sold to facilities of Commonwealth Edison in 1967.

[2819] Q Based on Table D-2F, sir, in regard to the shipments of the Medusa-Portland Cement Company at Dixon, it is true, is it not, that Freeman ships coal to that facility at Dixon, Illinois, from its southern Illinois mines?

A I simply don't recall, sir.

If so, I assume that will show up on the common customer table which is your own exhibit.

I simply don't recall whether this was one of those—one of those shipments.

Q Directing your attention, sir, to Table D-3F, which is the recapitulation of sales of coal produced in the Fulton-Peoria Freight Rate District—

A Yes?

Q The fourth page of the exhibit, your Honor.

Is it a fair statement to say, Professor Steiner, that a coal consuming facility would attempt to purchase coal as near to its—produced as near to itself as possible?

A I think we have seen a great deal that the purchase of coal is not simply a function of one factor such as distance, that it is a matter of cost per BTU, a matter of sulphur content, of ash properties and so on.

I think that other things being equal, a [2320] mine that is closer tends to have lower transportation costs.

But there is no single metric of distance on this. And we have lots of evidence in the record that shows that some coal travels long distances, coal that goes from southern Illinois up into northern Wisconsin travels a long way. That is not the closest coal. That may be the best coal in an economic sense for those stations to buy.

Q And it may, may it not, also be the only coal available?

A I'm not sure I understand that.

In general as I have understood the record when people have purchased coal they have had several alternative sources of supply when they have purchased coal, had bids from several places.

I think—I can conceive situations in short term, shortages where a company has had to buy all of the coal it could get.

I guess I recall something that Mr. Corey said, that they were buying all of the low sulphur coal they could get. I don't know if he really meant that. I'm sure that had some kind of cost constraints.

I think your original question was did [2321] I think that, without regard to other factors, people always bought the closest coal.

My answer to that would be no.

Q I understand. There are other factors involved, aren't there?

A There are not only other factors involved, but mere distance does not seem to me to be the factor.

Q Right. And in regard to coal availability, there has been some evidence in the case that the reserves of the United Electric Coal Companies have all been sold, which reserves are located in Fulton-Peoria and the Belleville District.

Where are the customers presently served by United Electric, who are unable to get coal from United Electric, where are they going to turn for coal?

MR. HEDLUND: I'm sorry, your Honor. May I have the question back?

THE COURT: Read the question.

Q (Read by the Reporter.)

BY THE WITNESS:

A Well, I think perhaps there are lots of answers to that question for each customer.

I think that if I recall the United Electric contract with Commonwealth Edison has expired, or is to expire [2322] soon. I think we heard evidence that it was not being renewed.

Where Commonwealth Edison is going to replace that fuel, whether it does it by coal, it does by coal from which districts, whether it does it by gas, whether it does by atomic energy, I don't know.

I suppose facility by facility, as any coal contract runs out that utility, that facility has to seek an alternative source of supply. I do not think that the particular plight of United Electric with respect to its uncommitted reserves is mirrored by all other coal companies in Illinois.



So merely speaking about coal, it is not, I think, the question of the general exhaustion of Illinois coal reserves. I think there are lots of companies that have coal reserves; I think there are lots of coal reserves, though my recollection of this is not as clear, there are perhaps a lot of coal reserves in Fulton-Peoria, in Belleville, that are not yet committed, even though United does not happen to own those.

But again it seems to me that the question of where it turns for supply is the central problem facing any customer.

[2323] What we have looked at here is the pattern of where, as of 1967, they had turned for supply, what that seemed to show, which was that there were clear patterns of economically attractive regions of supply, and that these, if one assumed that what people did was because it made economic sense, then one could tell something about the structure of coal markets.

[2324] Q Well, there has been testimony, has there not, Dr. S'einer, that Freeman will back up some of the contracts of United Electric. If that is a fact, isn't it true, then, that the Freeman mines in Springfield, the Springfield district, and in the Southern Illinois freight rate district will serve these customers?

A Well, it shows that it is possible to serve those customers. It may well be that if one wants to sell an 18-year supply of coal to someone who needs a 20-year supply, it makes sense to offer to transport up to two years of supply, and this was, after all, back-up guarantee—I take it one is never sure until the last 100,000 tons how many tons one will get from a given mine until one mines it—that even if they have to deliver on that, it may well be that the extra transportation costs on a two-year supply will make attractive a 20-year contract.

So I think it is one thing to talk about a back-up supply, a guaranteed supply, a complementary or supplementary shipment, and another to talk about offering to supply that facility for the whole 20 years, let's say, from the Springfield district or from another district.

Those are in simple economic terms very different matters.

[2325] Q Directing your attention, Professor, to Table D-3F, the recap of the Fulton-Peoria freight rate district, in regard to the total production of coal from the Fulton-Peoria district, 45 percent of the production goes to Commonwealth Edison Company, is that correct, sir?

A If that is what the table shows, and with the same qualifications as before, that is correct.

Q I am not arguing with the numbers. And 7 percent is sold to the Chicago Air Quality Control Region.

A It is sold to facilities within that region.

Q Yes, sir. Therefore, 52 percent of the total coal production of the Fulton-Peoria freight rate district is not contained in what you consider to be the geographic market for that district, is that correct?

A I think I tried to suggest, or these tables have tried to suggest, our concepts have tried to suggest, that there may be several markets, that there is a Commonwealth Edison market, that there is a market defined by non-Commonwealth Edison facilities in the Chicago Air Control Region, and that there is in addition that area on and around the Illinois River which is described in words some place and on the map in the overlay chart.

That coal going to those three regions, as [2326] distinct from other regions, adds up to in that case 98 percent of the production of the Fulton-Peoria coal covered in this exhibit.

Q I would like to try again, if I may. Based on Table D-3F, is it a fair statement to say that 52 percent of the coal produced in the Fulton-Peoria freight rate district is sold to Commonwealth Edison Company or to consumers located in the Chicago Air Quality Control Region and that 46 percent of the production is sold to facilities in what you consider to be the proper sales area for Fulton-Peoria coal production?

A I am with you until we get to the phrase "proper sales area for the Fulton-Peoria region." There is a defined area here, an area defined in terms of a set of customers of the Fulton-Peoria sales area. I am not saying there is anything proper about that concept, anything moral or otherwise proper about it. That is a defined area. It is an area that gets—these facilities get the

great bulk, 86 percent, of their coal from the Fulton-Peoria district. It sells an identifiable set of customers to whom Fulton-Peoria shipped.

[2327] I have no quarrel with the statistics. 46 percent of the coal from Fulton-Peoria goes to that group of customers. As you point out, 45 percent of the coal from that area goes to Commonwealth Edison, 7 percent goes to other Chicago area purchasers.

So if what you are saying is more coal from Fulton-Peoria goes to the Chicago area than goes to these group of customers, the answer to that question is yes. If you are saying something more than that, I don't quite understand what the statement is.

Q Professor, you are not saying, are you, that coal produced in the Fulton-Peoria Freight Rate District that is sold to Commonwealth Edison Company ends up in the Chicago area or that all of it ends up in the Chicago area?

A No. I misspoke, then. Thank you. It goes to stations of Commonwealth Edison. I think many of those are river stations that are in this geographic area.

Q It is a fact, is it not, that coal produced in the Fulton-Peoria Freight Rate District goes to Dixon, Illinois, to the plant of Commonwealth Edison Company?

A I simply do not remember. If that is a fact, [2328] I am sure the record will so show. We have here lumped, and I think of the Commonwealth Edison stations, for reasons I testified to yesterday—I think there are reasons for treating Commonwealth Edison separately. There are enormous demands, among others, which gives them a shipping problem and a scheduling problem as to where to send particular coals.

Q Coal from the Fulton-Peoria Freight Rate District goes to the Rockford public utility, does it not, which is now a part of Commonwealth Edison?

A Yes. I think that Rockford—again I don't remember the details, as to which coal from which area goes to which facility of Commonwealth Edison. That can be looked up, and I am sure it is in the record.

Q I notice on page 1 of your exhibit on the Fulton-Peoria District Table D-1F you have excluded 92,000 tons of dust from the Crown Mine.

A Is that a question?

Q Yes, sir.

A It is not my exhibit. I have not excluded, just for the record. This is defendants' exhibit, and they have excluded. I was aware of their decision to treat separately. I think this could have been done two ways. It could have been included in the statistics [2329] and footnoted, or it could have been excluded and footnoted. There is, I think, here complete disclosure of what the facts are. There is from what I understand of the dust situation a distinct difference between dust and other coal; just as it makes sense to segregate different kinds of coal if they are in fact different, it seems sensible to segregate these dust shipments for which we have had testimony that they tended to be used in limited quantities and had special problems with respect to their handling.

[2330] The footnote on page 1, which you have reported, is in fact correct. Those 92,000 tons of dust go from Crown Mine to the Meredosia plants, as I recall, of Central Illinois Public Service.

Q Which is also served by United Electric?

A That's right. This was one of the apparent common shipments that, when I looked at it, turned out to be coal from the Fulton-Peoria district—I forget which mine; perhaps the Banner Mine, but I am not sure which one—of United Electric, and dust from the Crown Mine to this Meredosia plant, which is south on the Illinois River.

Q You would not contest the fact, would you, that dust is coal, would you?

A Dust is a form of coal. That is coal dust is a form of coal.

Q And screenings is a form of coal, is it not?

A Yes.

Q In regard to Table D-1S, which is the analysis of sales to electric utilities of coal produced in the Springfield freight rate district, my understanding is, sir, that for your Springfield freight rate district—and I have reference to your overlay map—you have only two utility facilities, is that correct, sir?

[2331] A I believe that is correct. There were these two utilities which constituted the great bulk of the sale by the Springfield producing mines to utilities other than Commonwealth Edison. These two picked up, as I recall, as the figures suggest here, 16/18ths of the total amount of 1,489,000 tons, with only 206,000 tons going to other utilities.

Q Excluding Commonwealth Edison?

A Excluding Commonwealth Edison, which is here shown as receiving—Commonwealth Edison is clearly the largest customer of the Springfield district.

Q Which is the largest public utility facility, sir, located in the Springfield district?

A Which is the largest public utility facility?

Q Yes, sir.

A I believe that is the Coffeen facility. Is that what it is called? The mine-mouth facility of Central Illinois Public Service.

Q Would it be the Kincaid plant of Commonwealth Edison Company, to refresh your recollection?

A Yes. I think that is correct. I think there is a plant—I think that is correct.

\* \* \* \*

[2336]

AFTERNOON SESSION 2:15 P.M.

\* \* \* \*

CROSS EXAMINATION

(continued)

BY MR. CUSACK:

Q Dr. Steiner, would you please again refer to Table D-3F? Continuing our discussion on Defendants' Exhibit 55—

A Excuse me. I don't seem to have this at the moment.

Q I'm sorry, sir.

A Just a minute. Yes, I do. I'm sorry.

Q Thank you. In regard to Table D—excuse me—D-1F, which is the chart entitled "Analysis of Sales to Electric Utility of Coal Produced in the Springfield



Freight Rate District," now it is my understanding that the—there are just two utilities, two utility facilities located in what you consider to be the sales area for Springfield, and that is the Coffeen Plant of CIPS, and the Springfield Plant of the Springfield Water Light & Power facility; is that correct?

A Yes, excluding the Commonwealth Edison station that you called to my attention, the Kincaid Station.  
[2337] Q Yes, we discussed that already.

Now under column 3, sir, on that page "Springfield Production Sold to Utilities," the column on the right reads "percentage of total production." This is percentage of total production just sold to utilities, isn't it?

Q Yes, sir?

A And it so states.

[2338] Q Now, then, of all the production sold to utilities, 82 percent of it is sold to Commonwealth Edison, is that correct, sir?

A That's correct.

Q Are you familiar with the sales to Commonwealth Edison in 1967 from the Springfield Freight Rate District?

A I am not sure of the sense in which you mean that. I know there were 7.5 million tons.

Q Well, is it fair to say that you know that approximately 5.5 million of those tons were consumed at the Kincaid power station of Commonwealth Edison?

A A very large quantity was. I don't remember the precise percentage.

Q And the Kincaid station is located, is it not, approximately 30 miles south of Springfield?

A I don't know the precise location. It is very close to Springfield.

Q You recall the testimony of Mr. Corey, do you not, sir, in regard to when the Kincaid station was built?

A Perhaps you would remind me.

Q I believe he testified that it was completed, I think, in 1963 or 1964.

MR. CUSACK: Correct me if I am wrong, but I believe it was in the 1960's.

[2339] MR. HEDLUND: I believe the record will

show what it shows. I do not recall. If you want me to take the time to go into Mr. Corey's testimony, I will be happy to.

BY MR. CUSACK:

Q Let us assume, Dr. Steiner, that the Kincaid station was built between 1960 and 1965. Evidence in the record shows that the Mine No. 10 of Peabody Coal Company was built in the early 1950's.

Do you know where the production of Mine No. 10 went prior to the construction of the Kincaid plant in the 1960's?

[2340] A No, I do not.

Q You do not know, do you, that the coal moved on the Chicago and Illinois Midland through Springfield, through Menard County, up to Havana and then by barge to the stations of Commonwealth Edison on the river?

A No. I do not know that. It does not surprise me. I know that Springfield coal has gone to the river and has gone up the river.

Q For many years it is not true that Commonwealth Edison stations in the Chicago area purchased coal produced in the Springfield Freight Rate District?

A I believe Commonwealth has purchased coal in the Springfield District and that this has gone to numbers of their stations.

Q Has this been moved by rail or by barge through Havana, do you know?

A If I recall the testimony, there is at least some place in the record some discussion of some of this going by rail to the river, and I think that must have been at the Havana dock, and sent up the river. There may have been some that went directly by rail as well.

Q You do know, too, do you not, that the Kincaid power station of Commonwealth Edison, located below [2341] Springfield, sends its electricity over high tension wires to the Chicago area?

A I don't know exactly where it sells its electricity. That would not amaze me.

Q You would expect that?

A I didn't say I would expect it. If you say it is so, I would have no reason to contradict your statement that it was so.

Q Your Table D-18 shows that the Commonwealth Edison Company consumed 7,584,000 tons of coal produced in the Springfield Freight Rate District. This would be based, in 1967, from three mines, is that correct, sir?

A I am not in position to tell you how many mines that was from.

Q Do you know of any other mines in the Springfield Freight Rate District, other than the Crown Mine at Farmington and the Peabody Mine at Kincaid, and Peabody No. 10, which is at Pawnee, but is the Kincaid Station?

A Those are the only three that I recall.

[2342] Q And there is another mine on GX Nugent Deposition Exhibit 38 in the Springfield district. It is the Little Dog Mine at Gillespie. You do know, do you not, that that mine is closed?

A I think it was closed in 1967 because of a fire. It is not permanently closed, I think the record shows.

Q Yes, sir. Now, the difference between the coal consumed at the Kincaid plant by Commonwealth Edison and the total Commonwealth Edison production from the Springfield district is shipped, is it not, to Commonwealth Edison's plants in the Chicago area and down the river?

MR. HEDLUND: May I have the question, please?

THE COURT: Read the question.

(Question read by the reporter.)

MR. HEDLUND: I am going to object. I don't believe that question makes sense. I don't understand it.

THE COURT: I think Commonwealth Edison—you have mixed it up.

MR. CUSACK: All right.

BY MR. CUSACK:

We have established that the Kincaid station of Commonwealth Edison consumes between 5 and 6 million tons of coal. Is that fair to say?

[2343] Or let us assume that it consumes 5 to 6 million tons of coal.

A That is a fair assumption.

Q Very good. Thank you.

Now, then, the remainder of the coal sold to Commonwealth Edison which is produced in the Springfield district moves, does it not, to the other Commonwealth Edison stations?

A It moves to some other Commonwealth Edison stations, yes.

Q Does it move up to Havana? Is this coal shipped to the Havana dock and loaded on barges?

A I think I testified that I did not know exactly how and where it was shipped. It would not in any way surprise me if it were sent to the Havana station and by barge to a river station of Commonwealth Edison. It would not surprise me either if it turned out it was shipped to some other station. There is a rather complex set of stations, all of whom that burn coal get coal from somewhere. I do not know which station got coal from which mine.

Q What I am trying to elicit is whether or not you recall, and perhaps it would refresh your recollection if I recall to you in the Nugent Deposition testimony that [2344] the Crown mine coal sold to Commonwealth Edison moved on the Chicago & Illinois Midland through Springfield up through Menard County to the dock at Havana, where it was loaded on barges.

Does that refresh your recollection?

A Yes. I remember that. I do not remember whether there was any testimony that other coal from that area moved by another route either to those or to other stations of Commonwealth Edison.

[2345] Q I understand. Thank you.

And we have established, have we not, that the Havana dock is across the river and slightly below it from the Liverpool dock of United Electric, have we not?

A I don't know what you mean by "we have established."

I think it is so located.

Q Well, that is fine. And, of course, you are aware of the fact, are you not, that coal from the—shipped from the Liverpool dock of United Electric, coal produced at the Cuba and Buckhearts Mines does move up the river to the river stations of Commonwealth Edison?

A Yes.

Q Directing your attention, sir, to Table D-2S, which is the analysis of sales to non-utility facilities of coal produced in the Springfield Freight Rate District, this exhibit shows, does it not, that there were two industrial accounts which are in the non-utility sales area for the Springfield Freight Rate District; is that true?

[2346] A That's correct.

Q Now perhaps if you could explain this to me, sir, on the overlay chart you have the blue lines for the Springfield District, is that correct, at the center of the map?

A That's correct.

Q And this is a circle, is it not, running from Sangamon County down through Macoupin County, encompassing all of Montgomery County at the eastern part of Shelby County the southeastern part of Macon County, and the southern part of Logan County, doesn't it?

MR. HEDLUND: Your Honor, I'm going to object to this characterization by Mr. Cusack of this, or indeed of that map.

As part of the pre-trial proposed findings of fact we gave a precise geographical location or definition, if you will, of the Springfield non-utility sales area. That was admitted by the Government that this is how we defined it in terms of geography.

The representation here on the map as I understand it, only purports to be a rough general outline of the description that is already in the record as admitted to by the Government.

MR. COURT: Mr. Cusack?

[2347] MR. CUSACK: Well, I want to hurry this up, so I'm not going to look at the finding. I don't even have it handy.

What I'm trying to establish is the general area for the Springfield industrial market.

THE COURT: For the purpose of the record will you accept the areas as defined by the defendants here, with this being a rough approximation?

MR. CUSACK: Yes, as what they purport to be their area, yes.



THE COURT: Yes?

MR. CUSACK: Yes, I will, sure.

THE COURT: Proceed.

BY MR. CUSACK:

Q Based on the Springfield industrial market, have I given a rough approximation in reference to your overlay map?

BY THE WITNESS:

A Well, I have not prepared the maps, nor have I checked them that closely.

I believe that that area includes both of the facilities that are here listed, and that that area as drawn approximates the area as more precisely described in the definitions.

[2348] Q Doctor, my point is this: How can this include an area surrounding the City of Springfield, encompassing large portions of Sangamon, Macoupin, and Montgomery, Christian, Macon, and Logan Counties, and Shelby County, when in fact Table D-2S sets forth only two industrial plants, both of which are located in Decatur?

A Well, I don't know the precise locations of these facilities.

If you want to say to me that there are other facilities in that enclosed area that we have neglected to include, that would seem to me to be a serious deficiency.

When we drew the strip up and down the river, we drew a strip of some thickness, instead of just a line reflecting the river stations.

I think that if what you are saying to me is that the diameter of that circle is too wide then the person that prepared the chart, you know, may be called to be asked why he did that.

I think that what was of concern and of interest there was those industrial facilities which we see here accounted for 93 percent of these non-utility sales from that area, and which accounted [2349] for 83 percent of the purchases of those units. The kind of overlap I spoke of is suggesting a market that they are contained in an area,

rather narrowly circumscribed around the City of Springfield, and that is what this chart says to me. And I believe that is substantially correct.

I believe you are now suggesting that perhaps that area should have been drawn as a smaller circle. And that may well be the case. I do not defend the drafting. I defend the general impression of that as a distinct area that does not overlap with these others.

[2350] Q What I am suggesting, Professor, and I would like to ask you, is it fair to set up a non-utility sales area when it involves sales to two industrial companies, the A. E. Staley Company and Caterpillar Tractor Company, both having facilities located at Decatur in Macon County, Illinois?

A Let me again describe the criterion which were used to try and establish these markets.

The notion was that we would take, try and find, if we could, customers who together consumed a large fraction of the coal produced in that area.

Now, here, taking in this entire Springfield production of all the coal that was sold to non-utilities, 93 percent of that coal went to these two companies, to A. E. Staley and Caterpillar Tractor.

Q Do you mean 83 percent?

A I believe the figure I have says that of the Springfield production—I'm looking at now part 3—of the Springfield production, 93 percent of the non-utility production was sold to the non-utilities in this area, only 7 percent was sold to other non-utilities, and that was in the Greater Chicago Air Control Quality District, Control Region.

At the same time not only did these two [2351] facilities, these two facilities of Staley and Caterpillar account for the great bulk of the non-utility production, but at the same time those facilities got the overwhelming majority of their coal needs supplied by that area.

So it was this 2-way relationship, reciprocal relationship that helped us to define the market in general.

That was the strategy. It was not saying, "Where does the coal go?" It was saying, "Can we find people who buy the coal and take a large part of the coal from that

area, and also account for a large part of their purchases from that area?"

Q Dr. Steiner—

A Thus it might indeed be—I can visualize the situation from where you would have one facility that was buying most of the coal produced in an area, and that was getting all of its coal for that area.

It is not the number of companies that are necessary; it is the fraction of the total coal bought and sold that is at issue.

Q The fraction of the total coal produced is important, is it not?

A I think I just said that I thought it was.

[2352] Q All right, Professor Steiner, look at Table D-18. This states that the General Illinois Public Service Company plant at Coffeen and the Springfield Water, Light & Power plant at Springfield consumed in 1967, 1,489,000 tons of coal; is that correct, sir?

A That's correct.

Q And Table D-2S states that the A. E. Staley Company of Decatur, and Caterpillar Tractor at Decatur consumed 344,000 tons of coal in 1967 produced in the Springfield freight rate district; is that correct?

A I believe that is correct, yes.

Q The next table, Table D-3S, shows that the—adding together these two previous figures, which is under the title "Springfield Production Consumed by All Facilities in Sales Area" amounted to 1,833,000 Tons of Coal; is that correct?

A Are you asking me to check the arithmetic?

Q Is that what this purports to show?

A I believe that is what it says.

[2353] Q And isn't it a fact, sir, that this 1,833,000 tons of coal is only 19 percent of the total coal production in 1967 of the Springfield Freight Rate District, which according to Table D-3S amounted to 9,649,000 tons of coal?

A Yes, that is so. And that is shown precisely on that same page. That is at the bottom, under part 2 of the page, we show both that total production and that percentage distribution.

Of that production 19 percent went to these facilities, utility and non-utility.

Another 79 percent went to Commonwealth Edison, of which, as you pointed out to me, over 5 million, 5½ million was also in that geographic area.

The other was to other stations.

And 2 percent represents 232,000 tons, which was sold to all other facilities.

Q Wherever located?

A Wherever they may be. I think we can identify those, if—

Q Professor, on that last page, Table D-3S, the recapitulation of the Springfield sales, you have 70,000 tons coming into your area from Mineral-Atkinson; [2354] is that correct, sir?

A That's correct.

Q Do you know where that is located?

A I believe that is north of Fulton-Peoria, and northeast, I believe—no, I believe it is—my general impression is that Mineral—it is in the north part of the state. I don't remember its precise—

Q Atkinson is in Henry County?

A Yes.

Q Which is north of Fulton-Peoria?

A That's correct.

Q Directing your attention, sir, to Table D-1B, the chart entitled "Analysis of Sales to Electric Utilities of Coal Produced in the Belleville Freight Rate District," under numbered paragraph 2, sir, coal consumption by utility facilities located in the Belleville sales area shows, does it not, sir, that in the area designated by the defendants as the Belleville sales area for utility facilities, 918,000 tons of coal moves into this area, which coal is produced in the Southern Illinois Freight Rate District; is that correct?

A That's correct.

Q And 436,000 tons of coal consumed in your [2355] area moves from mines produced in the western Kentucky field; is that correct?

A That's correct.

Q And 429,000 tons of coal is from the Mineral-Atkinson area; is that correct?

A That's correct.

[2356] Q And 62,000 tons are from the Springfield district, is that correct, sir?

A That's correct.

Q In other words, 21 percent of the coal consumed in what the defendants have designated as their Belleville sales area for utility facilities is produced in other freight rate districts?

A That is precisely, it seems to me, what the table, Table D-1B, says. It says approximately 80 percent is produced in the Belleville area and 21 percent is produced in these other areas.

Q Again, sir, discussing Commonwealth Edison Company, are you aware of the coal produced by the Captain Mine of Southwestern Illinois Coal Corporation?

A Yes, I am.

Q Which coal moves on the Gulf, Mobile & Ohio Railroad Company, through Springfield, Illinois, to the Will County station of Commonwealth Edison Company?

A Yes. Would you like me to speak generally on the problem of Commonwealth Edison and its coal purchases?

Q No. I will go into that later, if I may, with leave of the Court.

THE COURT: You may.

BY THE WITNESS:

A Well, I think—

[2357] THE COURT: Answer the question. Is there a question?

THE WITNESS: Am I aware of it? Is that the question?

BY MR. CUSACK:

Q Yes.

A Yes, I am aware.

Q You are also aware that it moves through Springfield, Illinois, on the GM&O and then north to Will County?



A I was not aware of the precise routing of that coal.

MR. CUSACK: Will counsel so stipulate, that the coal on the Gulf, Mobile & Ohio Railroad moving from the Captain Mine of Southwestern Illinois Coal Corporation moves on the Gulf, Mobile & Ohio through Springfield and north to Will County?

MR. HEDLUND: Yes, if counsel will stipulate that this is a unit train movement in a train that never stops.

MR. CUSACK: I will stipulate it is a unit train movement. I don't know whether the train stops.

THE COURT: I think that is a fair assumption. Will you accept that condition?

MR. HEDLUND: I need not mean to say that it didn't stop to unload. What I meant to say was that that was [2358] the only reason that it stopped. It is a continual movement, your Honor.

THE COURT: All right.

[2359] BY MR. CUSACK:

Q I have forgotten one thing, Professor. The first page of Table D-1B—we were discussing your Belleville District, consuming district, and we found out that 918,000 tons sold in this district comes from the Southern Illinois District. This excludes, does it not, 970,000 tons of dust produced by coal mines in the Southern Illinois District, does it not?

A Again, if I may disclaim it being my exhibit, the footnote says it excludes that dust. I have no reason to think the footnote and therefore the exhibit is wrong.

Q I understand. Thank you.

Now directing your attention to Table D-1B, continuing on the second page of that, sir, it is fair to say, then, that 6,526,000 tons of coal produced in the Belleville Freight Rate District in 1967 was sold to Commonwealth Edison Company, is that correct?

A That is what the table says, yes.

Q Which is 40 percent of the total production sold to utilities, is that correct?

A That's correct.

Q And this coal is not consumed at the Powertown [2360] Station of Commonwealth or at the Kincaid Station, but is consumed at the river stations of Commonwealth Edison Company, isn't it?

A I do not have at my fingertips the precise destination of that coal. I think that must be the same coal you were talking about a moment ago that went on this unit train, the train shipment; which facility or facilities consumes that I do not remember.

MR. HEDLUND: I might add, your Honor, this is all in the record.

BY MR. CUSACK:

Q Directing your attention to Table D-B2, is it a fair statement that 24 percent of the coal produced in the Belleville District sold to the non-utilities is sold in the Greater Chicago Air Control Region?

A That is what this table shows, yes.

Q So that coal moves from the Belleville District, which is directly to the west and slightly to the north of the Southern Illinois District, to the Chicago area?

A That's correct.

[2361] Q Looking at Table D-3B, the recapitulation, it is a fact, is it not, that 46 percent of the coal produced in the Belleville freight rate district in 1967 was sold either to Commonwealth Edison Company or to facilities located in the Greater Chicago Air Quality Control Region?

A Yes.

Q In regard to Table D-1SO, which is entitled "Analysis of sales to electric utilities of coal produced in the Southern Illinois Freight Rate District," there is a listing, is there not, here, sir, of the utility facilities located in your southern sales area?

A In the southern sales area.

Q This is based on 1967 coal production, sir, is it?

A That is my understanding throughout this whole exhibit.

Q None of the coal in this area, as far as this exhibit shows, moved to any of the facilities of the Union Electric Company, is that correct, sir?

A No. I believe Union Electric Company is listed in the facilities.

Q Excuse me. Yes. Well, then, would Union Electric service area be part of your southern Illinois district?

[2362] A I think that the Union Electric facility, the Sioux facility at West Alton and St. Charles, if I read this correctly, in Missouri, is included in that district, yes.

I think there are a number of facilities of Union Electric, and it is that facility—again, I don't have a terribly good memory, but it seems to me that is a rail facility that sends coal by rail from southern Illinois to that facility as distinct from other facilities of Union Electric which receives barge coal from the Belleville area.

Q And the Belleville area traditionally, does it not, serves the mines of the Union Electric Company—excuse me,—serves the generating stations of Union Electric?

A Some of them.

Q You know, do you not, that the Orient mines of Freeman in the Southern Illinois Freight Rate District now have a contract to supply the Sioux plant at Alton, isn't that correct?

A I am not sure if that is correct or not. There are so many sales data I have forgotten, and I am embarrassed to say that is one of them.

Q I believe Mr. Nugent testified in his deposition on it— [2363]

A If he so testified, I am sure that is correct.

Q The Table D-1SO is continued on the second page, and on the second page you have sales to utilities in your sales area amounting to 7,987,000 tons, and then sold to Commonwealth Edison, 137,000 tons, and you have sold to other utilities 1,714,000 tons.

Do you know, sir, which other utilities this would be referring to?

A I think I have a list of them, if I may look at it. [2364] MR. HEDLUND: Your Honor, in the interest of time, we would be more than happy to put into the record that list.

THE WITNESS: There are large lists of these.

BY MR. CUSACK:

Q Would you please read them off? It might expedite this, your Honor. I wouldn't have to go into it any further.

THE COURT: Mr. Hedlund agrees to stipulate that whatever is on the list, showing whom they are sold to, will be incorporated in and will be made a part of the record, unless you want to have it read off.

MR. CUSACK: There are about ten names, your Honor.

THE COURT: All right.

BY MR. CUSACK:

Q Would you answer?

A I think one of the problems is that that 1,714,000 tons of coal will divide into two parts. The list I have here is 946,000 tons of coal that are sold to facilities which I will be glad to read, if you like, that are in none of the four sales districts. There are other facilities—this coal has appeared elsewhere. You will recall there is some Southern [2365] Illinois coal that went to some customers who were in other districts.

Q Yes.

A I do not have that specific list, but I can give you the list of about 946,000 of those tons.

Q Fine.

A If I can read you this, I think some of those sales went to American Electric Power in Mishawaka, Indiana; some to Central Illinois Public Service Company in Huntsville, Illinois.

Q Do you know where Huntsville is located?

A Well—

Q Never mind.

A No, I don't.

Q Go on.

A Some of that coal—this is utility coal.

Q Yes, sir.

A Some went to Illinois Power at Vermillion-Oakwood, Illinois. A substantial amount went to the Clifty

Creek facility. That was that Ohio—Mr. Ward, was it, who testified to that facility that provided power to the Atomic Energy Commission. Clifty Creek, Indiana.

Q Is that in southern Indiana?

[2366] A I believe it is in southern Indiana or conceivably in Kentucky. I think it is on the Ohio River. Some of that went to Rochester Public Utility, in Rochester, Minnesota; some went to something which I don't know, called the Rochelle Light & Power in Rochelle, Illinois, which is perhaps a municipal plant.

A substantial amount—well, not substantial—some amount went TVA in Johnsonville, Tennessee.

Q How much would that be?

A In this list that is 68,000 tons. Some went to Wisconsin Power & Light in Beloit, Wisconsin.

Q How many tons was that?

A That is a small shipment, 22,000 tons.

But these details are available in the printouts. This is a hand tabulation of some of that tonnage, because I was curious to see where in fact it did go. It goes to a variety of the locations.

[2367] Q In Indiana, Wisconsin, Illinois and Minnesota, right?

A Tennessee, Kentucky. Kentucky, I think, is to something called Louisville Gas Company. A variety of locations. This southern Illinois coal goes to a lot of places.

Q Just for purposes of the record, the Clifty Creek facility in Indiana gets 207,000 tons, is that correct?

A That is what this says.

Q And the Huntsville plant gets 253,000 tons, is that correct?

A That is what this says.

Q And the Mishawaka, Indiana, facility of American Electric Power gets 69,000 tons, is that correct?

A That's correct.

I think Clifty is called the Ohio Valley Electric Association. That is, the operator of the Clifty Creek plant.

Q In regard to the recapitulation, Table D-3SO, this shows, does it not, that all the coal consumed by all



facilities in what is purported to be the southern sales area—of that 42 percent of this coal is produced in west Kentucky, Mineral Atkinson, Belleville, Indiana, [2368] Murdock, Springfield, and Fulton-Peoria, in total?

A I think a negligible amount in Springfield and Fulton-Peoria. Most of that, 34 percent, is from west Kentucky.

May I say that from all of these areas, the one that was least satisfactory, in a kind of reciprocal analysis that I wanted, was the Southern Illinois area. It is clear there is a great deal of overlap between southern Illinois and west Kentucky. A lot of that coal goes into west Kentucky, partly because it goes to TVA stations in the west Kentucky area.

So I am not sure, if I were drawing it, that I wouldn't think of a market area that merged some west Kentucky with some southern Illinois. The west Kentucky fields seem to have a substantial overlap.

Q You have testified that the west Kentucky field, the west Kentucky sales area, I mean, is in Wisconsin, is that correct?

A No, sir.

Q Excuse me. Strike that. You testified that the southern Illinois sales area is in this eastern portion of Wisconsin, is that correct?

A Southern Illinois coal is heavily concentrated in three areas. One area is that northeastern section of [2369] Wisconsin, the blue wedge. Another section is west of the Mississippi River, that large blue balloon. A third area is down in that tri-state area, TVA, which includes Cape Girardeau. We can look at the facilities by name. Particularly in that area, as you can see, which involves Missouri, Indiana, Illinois, in that corner, that four-state area, west Kentucky coal goes into many of those same facilities.

It is that fact, I think, which results in all of these areas we have looked at, where the southern production consumed by the southern area, in the sales areas only, accounts for 56 percent, as you have pointed out—I thought perhaps it was 58, but I am not sure—I think it is 56 percent of the consumption of the facilities in

this sales area comes from there. The rest come in great bulk from west Kentucky.

I believe there is just a mistake in addition on that table.

Q Which one is that?

A I believe where it says 42 percent, it should be 44 percent.

[2370] Q On Table D-3SO?

A That's correct. I think the 56 percent is correct. I think the sub-totals are correct—34, 3, 3 and 1. But I think that adds up to 44 percent.

MR. CUSACK: Will counsel stipulate to that correction?

MR. HEDLUND: We certainly will.

THE COURT: All right.

MR. CUSACK: And may the chart so show?

BY MR. CUSACK:

Q In other words, you have 44 percent from the other producing districts and 56 percent from southern Illinois?

A That is correct. But I think that unless one recognizes that 34 of the 44 is from west Kentucky, one—the real question, and the question I confess I had and still have, is whether one should have defined instead a combined southern Illinois—west Kentucky area for this utility, for the purpose of these utilities.

Q Would you have defined a combined southern Illinois and Fulton-Peoria district?

A Southern Illinois and Fulton-Peoria?

Q Yes, sir.

A No, I would not.

. . . . .

[2376] Q And Commonwealth Edison Company, does it not, sir, have coal-fired generating stations located south of Springfield, south of Peoria, at Dixon, Rockford, Will County, near Joliet, Waukegan, Chicago, and on the Illinois-Indiana border at State Line; is that correct?

A They have a number of facilities. I think the record will show where they are.

Those dots on the map purport to indicate the major collections of them.

Q So it is your view then that Commonwealth Edison Company no matter where its stations are located, is the separate geographic market; is that correct?

A I think you are trying to put words in my mouth.

I think that the Commonwealth Edison Company, by virtue of the quantity of coal it purchases for its power stations and the particular problem it has, and the problem it has of getting enough coal for each of its coal-fired stations is better considered as a separate market than being lumped in with some of these other markets. [2377] Q And is it a separate market, sir, because of its size?

A Well, I think that size is one of the things that makes it sensible to treat it separately.

I suggested that its heavy involvement in nuclear energy was the second reason perhaps why it might make sense to treat it separately.

Q Based on your professional experience—

MR. HEDLUND: Just a moment. I'm not certain that the witness was finished with his answer.

THE COURT: Did you finish your answer?

THE WITNESS: Not quite.

THE COURT: All right, continue.

MR. CUSACK: Excuse me.

BY THE WITNESS:

A I think I was saying that it's particular concern with nuclear energy, and its particular sensitivity to the air pollution pressures that at least are partly responsible for its interest in sources of energy other than coal, all of these things make it a rather distinctive case, and one that it seems to me sensible to treat as a separate economic market.

[2380] A I think one can think of numbers of situations [2381] in which the presence of a dominant firm so affects the whole picture of the way in which an industry behaves that it may be sensible to treat it separately.

Again I want to talk as an economist, and not as what I am not, not a lawyer. I'm trying to remember—

I have just the faintest glimmer that in one of the California bank cases there was some discussion of treating the market absent Bank of America on the grounds that Bank America with its multiple branches was so large a factor that to include it would distort the picture.

[2382] Q Do you—

A But there are various situations, cases in which—the Shoe Machinery is one in which a single firm was held so to dominate an industry that to treat it as if it were a separate force seemed appropriate. I think there is no rule here as to what makes better sense. One asks, really, whether separating or combining a particular dominant firm—in this case a dominant coal purchaser with others—but in a situation where the combining the firm with others provides more insight than keeping it separate.

Here it seems to me that keeping Commonwealth Edison Company as a purchaser of fuel separate from the other utilities in this area makes more sense than to combine it.

Q Well, Professor, the Shoe Machinery case was Section 2, Sherman Act monopoly case, wasn't it?

MR. HEDLUND: I object.

BY THE WITNESS:

A I was not talking—I'm sorry.

I was not talking to the legal aspects. You asked me as an economist did I think it made sense.

There are people who manufacture these machines.

[2384] I think that this kind of area of division which I have testified to, which seems to me a sensible solution, that their mines are in largely non-closely competitive producing districts. I think in one sense, [2385] of course, all producers of energy are in an energy market. Both of these coal companies, along with other companies, are concerned with supplying energy.

I think that in terms of the question that I believe is of central concern, these companies are very largely not in close and direct competition for particular customers with a significant exception of Commonwealth Edison.

Q Concluding with some questions—concluding my questions on DX-55, I just have a few more to ask you.

DX-55 is just for 1967; that is correct, isn't it?

A That is my understanding.

Q Dr. Steiner, is it fair to construct any sort of a geographic market or markets based on data for only one year?

A It is better than data for no years.

I think what you—

Q I believe you have answered the question. Thank you.

You have ignored, have you not, in DX-55—your Honor, may I confer with my counsel on the Elm mine situation?

THE COURT: You may. You may.

\* \* \*

[2387] THE CLERK: Case on trial.

THE COURT: Are you ready to proceed?

MR. CUSACK: Yes.

Your Honor, we have a stipulation based upon examination of the Morrison and Abrahamson deposition. Based upon those, we stipulate that the new unit at the Edgewater Utility at Sheboygan, Wisconsin, the largest coal-fired unit in the State of Wisconsin, owned by Wisconsin Power & Light and Wisconsin Public Service Company, will receive by unit train in utility-owned cars costing \$16,000 each up to one million tons per year for 15 years with a ten-year option, with Peabody Coal Company, for coal to come originally from Fulton County, Illinois.

THE COURT: Is it so stipulated?

MR. HEDLUND: We so stipulate that that is what the record shows.

THE COURT: All right.

BY MR. CUSACK:

Q Now, Professor, based on that stipulation and based on your prior discussion of DX-55 and your construction of markets on that basis, you have, have you not, not taken into consideration that stipulation which we have just stated?

[2388] A Obviously—

MR. HEDLUND: I'm going to object to the phrasing of that question on this basis: This data was 1967; this refers to something following that period. With that



understanding, I would not object to the question.

THE COURT: Is that agreeable?

MR. CUSACK: Yes, your Honor.

BY THE WITNESS:

A This sounds to me, Mr. Cusack, like one of those things that the record suggests is possible, where a facility is geared to a mine and a rail shipment. If I understand that stipulation, and I heard it just once, one has here a facility that is built—

[2389] MR. CUSACK: Your Honor, I request that the witness answer the question.

BY MR. CUSACK:

Q My question, and I will rephrase it if you want me to, and with the permission of the Court—

THE COURT: You may.

BY MR. CUSACK:

Q Your DX-55, sir, does not take into account any shipments after 1967.

A That is correct.

Q And your DX-55, sir, does not take into account any shipments prior to 1967, isn't that correct?

A DX-55 is based on 1967 data.

Q And you also have ignored, even in 1967, sir, the production of the Mecco mine of Peabody, which in that year produced 1,248,000 tons of coal; isn't that correct?

A I don't know that that is correct.

Q As shown by Kolbe Deposition Exhibit 19.

MR. CUSACK: Will counsel so stipulate, that DX-55 does not take into account the production of the Mecco mine of Peabody?

. . . . .

[2396] Q Is it possible, sir, to define any geographic market for the sale and distribution of any product, or even need for the production of any product with much exactitude?

A I have heard your question, but I don't believe I understand it.

I think there is some approximations to markets, some estimates attempted to delineate them that seem to me more sensible, more accurate than others.

I do not think, except in very rare cases, one would be able to define a perfect market definition that meets everyone's criterion of what was desired. But I think there are reasonable approximations, and one does the best one can.

Q Is it possible, sir, that by limiting data selection to a single year to arrive at a distorted picture of the market?

A Are you asking me if it is possible to deliberately distort a market by limiting attention to a single year?

Q No, sir, not "deliberately" at all.

A Are you asking me if the data for a particular year might possibly be quite different in another year?

The answer, of course, is that they might be.

[2397] I have no reason to think that these data are particularly a biased selection of year.

I think, as an economist, I would have been very pleased to see the same data collected year by year for 40 years, and we could have traced the way in which the markets change.

I do not, within the context of what you would call reasonable estimations, whether taken from the customers' statistics or producer statistics, which I understand were collected in the same discovery procedure, I don't think that either one of those sets are inherently suspect because they are of a single year. I think there is a great deal of information in the testimony that we have heard in this case, there seems to be substantial stability in coal buying partly because of long-term contracts, in part because of repetitive attempts to get coal from particular areas by particular utilities.

MR. CUSACK: May I have a conference with the witness on Defendants' Deposition Exhibit No. 36?

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

• • • • •

[2411] For me to go further and to say that these [2412] mines are with respect to most of their customers or with respect to a substantial number of customers, a very substantial fraction of all customers, in the same market is a very different question.

I have in mind here that I could visualize two quite separate markets that had an area of overlap. In that area of overlap a customer located in that area of overlap might well be reached from either one of the separate markets. That would not, by virtue of finding that overlap, suggest that there was a total identity of the two markets.

Q Is it true that a coal consumer might negotiate with a number of coal producers before locating a coal consuming facility?

A I think it is not only possible; I think the record shows that this has happened.

Q In such a case, then, the location of this facility would not reflect the actual competition between coal suppliers that occurred before that facility was located there, isn't that true?

A May I have that question?

THE COURT: Read the question.

(Question read by the reporter.)

[2413] BY THE WITNESS:

A No. I think it would reflect it. I think that a customer attempting to locate a facility, considering several possibilities in terms of different coals or several possibilities including different fuels, would consider the site of what it considered the possible and relevant suppliers, and I think, having once chosen one, that what that would suggest is that he found that particular supplier in that particular location to be the economically best solution for him as of the moment of that decision.

In that sense, it seems to me it does not, and perhaps this is what you had in mind, show, by itself which alternatives he considered; but it shows which alternatives he selected.

MR. CUSACK: May I confer with my colleagues for a moment?

THE COURT: You may.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

\* \* \*

[2423] REDIRECT EXAMINATION

BY MR. HEDLUND:

Q There was reference in your cross examination both with respect to—well, particularly with respect to Commonwealth Edison.

I would like to ask you to assume that the coal at a mine in Fulton County has a higher BTU than coal from the Springfield Freight Rate District, and I would like to ask you—I would ask you to assume that this coal from Fulton County to a dock opposite Havana costs about 10 cents or so per ton to deliver it to that dock; and I would like you to assume that the freight rate from the mine in the Springfield District was 85 cents or thereabouts to the Havana dock, and that beyond the Havana dock to the river stations of Commonwealth Edison the barge rate is the same.

Then I would like you to assume that Commonwealth Edison has purchased coal from both such mines to burn in the same stations.

First of all I would like to ask you if you can conclude why they do that, and if you would have an explanation for it?

A If I understand the figures you gave me the coal from Springfield is 75 cents more expensive in terms of shipment, and is, at the same time, a somewhat low BTU per ton. That suggests—is that correct?

[2424] Q That's correct. And I believe—well, yes, that is correct.

Just for purposes of reference, I believe Mr. Nugent said that 100 BTU differences is worth about a nickel a ton.

A Clearly in that case, if that station of Commonwealth Edison were in a position to acquire all of its

supplies—I also assume that there are no other differences in the coals that we haven't specified?

Q That's right.

A I would assume that if they are in a position to acquire of its coal from that facility, from the Peoria-Fulton District, it would have done so; it would have saved transportation costs, and gotten more energy per ton as well.

I would conclude, I think, that it went to the more expensive source of coal because it simply could not satisfy all of its requirements at the lower price from the Fulton-Peoria area, that because of its total demands it needed more coal than it could get in one area, and therefore that it had been pushed into acquiring a secondary source of coal for that plant.

Q Mr. Cusack inquired about everything else being equal would not a coal customer prefer to [2425] purchase coal from a mine closer to it than one farther away.

Is it always true as a principle of economic theory that what one might intuitively expect to be the most economic purchase in a situation where proximity is important, that one would expect to go to the closest facility rather than the farthest facility, that intuitively you would expect that, but when you analyze it that the opposite is true from an economic standpoint?

A That is a well-known theorem. It is called the transportation problem in economic theory, a problem that is—perhaps I can illustrate it this way:

If a company has, let us say, three producing locations and ten selling locations, its problem is to decide which plant in each case ships to which selling location, so as to get the right quantity of output at each selling location in such a way as to minimize its total freight rate.

Now that turns out to be an involved program in something called linear programming. It is a problem that has been solved as a practical matter for large companies in part because of the [2426] introduction of computers.

Kimberly-Clark is one example that I know of that utilizes now this kind of analytical scheme to figure out



what is the best way in which the supply from the various factories goes to various distribution points.

In this connection, for example, it is quite possible that if, let us say, Commonwealth Edison has one station near Chicago and another near Springfield, and it needs coal both from the Springfield area and from the southern Illinois area, or from the Belleville area, let's say, it might be efficient in terms of minimizing its total coal bill to ship coal from right next to the Springfield plant to the Chicago area, and coal from Belleville to the Springfield plant.

I take that as a purely hypothetical thing.

What one is concerned with in this case is allocating a number of shipments from a number of sources of supply to a number of facilities in such a way as to minimize the aggregate transportation costs. And that turns out, by the way, to be a tremendously difficult problem to set up and solve analytically, even with the aid of modern mathematical models and [2427] moderate size computers. This is done quite routinely for a number of different enterprises. I have no idea if Commonwealth Edison uses that sort of technique in analyzing its fuel costs, but it wouldn't surprise me if it did.

. . . .

[2428] Q Mr. Cusack asked you, or made reference to your discussion of the coal industry in your textbook. [2429] Is there a difference between an industry and a market?

A It is a distinction that is usually made to refer to an industry as a—some description of a set of producers, and thus the standard industrial classification involves a great many—either in terms of a set of producers, or in terms of a specified product, a product like coal.

There is a coal industry in the statistical sense. There are a set of producers who produce coal who have, as Mr. Cusack reminded me, publications and trade associations and that sort of thing.

Having said that, we have not yet come to the question which I talked about at some length—was it yesterday—as to the definition of a market for the purpose of

analyzing a particular question that occurred in a market.

Competition occurs in a market.

Production occurs in an industry.

MR. HEDLUND: May I have just one moment, your Honor?

THE COURT: You may.

(There was a short interruption, after which the following further proceedings were had herein, to-wit:)

\* \* \*

[2437] THE COURT: Now, in your analysis of the coal industry as we find it here in illinois and as posed by all of the facts that have come in in this case, is there anything about it that does not make it susceptible to the same criteria in judging the competitiveness of the market as it does in industry in general, that is, the industries that you have studied?

THE WITNESS: I think the same kinds of considerations pertain. I think there are some specific differences. I think in this case what seems to me the importance of reserves as distinct from production is an index of strength. I think that the great importance of physically very different competitive products, like nuclear energy, is somewhat a special feature. But not in principle different.

I think that the fact that the coal industry in some senses is fighting for its life with this air pollution thing gives some different overtones to the general problem of the set of pressures that faces them.

I think the fact that this is an industry that sells almost all of its products to very large, [2438] very well informed buyers, importantly conditions the way in which this competition occurs.

I think all of those things also are present in more or less degree in other industries. I think here again something that is important just because it plays such a large role in this case is the tremendous importance of transportation costs. The greater the transportation costs as a function of total delivered price, the more important it is to look at location and transportation routes in determining which sellers are generally in competition

with others, so that I suppose my general answer is you always, when you get down to the nitty-gritty of it, have to look at the details of the particular situation, and I must say in this case my opinions about the coal industry have been changed very much by looking at the data in the record.

[2439] I started out thinking that coal was an industry of lots of small producers and that it was a dying industry. I have changed that view very substantially in the course of this. I don't know if that answers your question.

THE COURT: That answers the question. Are there any questions as a result of mine? Mr. Hedlund?

MR. HEDLUND: Yes, your Honor. Just one.

BY MR. HEDLUND:

Q Are there many industries with which you are familiar, Professor Steiner, where the type of buying in terms of long-term contracts is as prevalent as it is in the coal industry?

A Not many. I think when electric utilities, to take another situation, buy steam turbine generators, they are buying in effect long-term delivery of services. Heavy equipment, and this sort of thing is of course buying a stream of services over many years.

But I think any place where you have purchasing of very expensive either supplies in terms of this kind of long-term supply contract or in terms of equipment, which after all is providing services over a long period, has this kind of importance to buying. I think it is no coincidence in electric power that the [2440] same executives frequently—Philip Sporn, for example, who has testified, does the coal buying and also, I understand, does most of the heavy equipment buying, or he did when he was president of AEP.

THE COURT: Any questions, Mr. Cusack, as a result of mine?

MR. CUSACK: Perhaps one.

## RECROSS EXAMINATION

BY MR. CUSACK:

Q Would you analogize the steel industry with the coal industry?

A In what dimensions, Mr. Cusack? Surely there are some similarities. There are some tremendous differences.

Q In regard to freight rates and freight costs.

A I think steel is a purchaser and requires large quantities of both coal and iron ore. It is therefore heavily influenced by that. It is different in that complicated steel products and steel products unfabricated carry a much heavier, higher, unit value than coal.

When you are talking about a ton of steel, you are talking about well over a hundred dollars a ton as the value of that shipment. You can support [2441] a good deal more freight rate with that than you are talking about when you talk about a commodity that bears a value of five or six or even in the case of metallurgical at ten or twelve dollars a ton.

So they are similar in some respects and different in others.

\* \* \* \*

[2445]

1678

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

No. 67 C 1632

UNITED STATES OF AMERICA, PLAINTIFF

vs.

GENERAL DYNAMICS CORPORATION; THE UNITED ELECTRIC  
COAL COMPANIES; and FREEMAN COAL MINING COR-  
PORATION, DEFENDANTS.

Before the HON. EDWIN A. ROBSON, Chief Judge

Wednesday, April 22, 1970

12:20 o'clock a.m.

PRESENT:

MR. JOHN THOMAS CUSACK,  
MR. ROBERT L. EISEN,  
MR. RONALD L. FUTTERMAN, and  
MR. RICHARD J. BRAUN,

appeared for Plaintiff;

MR. REUBEN L. HEDLUND,  
MR. DONALD G. KEMPF, JR., and  
MR. RICHARD H. IRVING, III,

appeared for Defendants.

ALSO PRESENT:

DR. PETER STEINER.



[2446] THE CLERK: Case on trial.

THE COURT: Good morning, counsel. Are both sides ready to proceed?

MR. CUSACK: Yes, your Honor.

MR. HEDLUND: Yes, your Honor. I have a preliminary matter.

At this time, your Honor, to the extent I have not done so before, we wish to offer into evidence Defendants' Exhibits 227 through 239, and I will not take the trouble of reading—I have a list that I propose to give to the Court Reporter, if that would be satisfactory.

THE COURT: Any objection?

MR. CUSACK: We have no objection to any of the exhibits except in DX-239. Mr. Futterman has some expertise on that. May we delay our comment on that until I have a chance to confer with him? He is the "239 man."

THE COURT: All right. All exhibits may be admitted into evidence except 239.

(Defendants' Exhibits 227 through 238, previously marked, were received in evidence, a description thereof incorporated in the record herein following, to-wit:)

*UNITED STATES v. GENERAL DYNAMICS, et al.*

67 C 1632

# DEFENDANTS' EXHIBITS

(Continued)

DX NO.

- 227 November 1, 1963 Memorandum from R. H. Inman to R. J. Hepburn re Freeman analysis of Kerr Mine.
- 228 Excerpts from the Minutes of the Board of Directors of The United Electric Coal Companies for September, 1966, pages 4386-4389.

- 229 Form 250 Response to the Court-Ordered Subpoena Questionnaire for the Freeman Coal Mining Corporation.
- 230 April 13, 1970 letter from Mr. Allen Van Wyck, Chairman of the Board of Illinois Power Company to Donald G. Kempf, Jr.
- 231 April 14, 1970 letter from K. E. Bowen, President of Central Illinois Public Service Company, to Donald G. Kempf, Jr.
- 232 Brochure entitled "Low Cost Electric Power and Dependability . . . Through MAPP".
- 233 Brochure entitled "Mid-America Interpool Network —MAIN".
- 234 1969 Annual Report of Illinois Power Company.
- 235 Article entitled "Shortage of Low-Sulphur Coal Hampers Electric Utilities in Antipollution Efforts," *The Wall Street Journal*, April 6, 1970.
- 236 April 1, 1970 letter from Marvin O. Young, Vice President and General Counsel for Peabody Coal Company, to Reuben L. Hedlund re coal reserves in McDonough, Schuyler, Adams, Brown and Hancock Counties (Illinois).
- 237 Series of four tables: (1) "Fraction of Total Illinois Production of Leading Companies Other Than Peabody"; (2) "Average Production Per Company"; (3) "Changes in Concentration in Illinois Coal Production Since 1959"; (4) "Changes in Concentration in Illinois, Indiana, and Western Kentucky Since 1959".
- 238 Telegram of March 5, 1970 from Stephen F. Dunn, President of the National Coal Association, to the President of the United States re foreign oil imports to Midwestern utilities.

. . . .

[2450]

JAMES M. FOLSOM,

called as a witness in rebuttal by the plaintiff herein, having been first duly sworn, was examined and testified as follows:

## DIRECT EXAMINATION

BY MR. CUSACK:

Q Please state your full name.

[2451] A James M. Folsom, F-o-l-s-o-m.

Q And what is your home address?

A 2704 Clagary Road, Kingston, Maryland.

Q And what is your position, sir?

A I am an economist of the Federal Trade Commission.

MR. CUSACK: I ask the Court Reporter to mark for identification as Government's Exhibit 140 the vitae on Mr. Folsom, a two-page document.

(The above document was thereupon marked as Government's Exhibit 140 for identification.)

MR. CUSACK: Your Honor, the Government moves the admission in evidence of GX-140.

MR. HEDLUND: We have no objection, your Honor.

THE COURT: It may be admitted.

BY MR. CUSACK:

Q Mr. Folsom, the vitae does not indicate what cases in which you have testified on in regard to your duties at the Federal Trade Commission as an economist.

Could you please tell us which cases you have testified on?

BY THE WITNESS:

A Federal Trade Commission v. Sperry & [2452] Hutchinson Corporation.

Federal Trade Commission v. Kennecott Copper Corporation.

Federal Trade Commission v. Allied Chemical Corporation.

Federal Trade Commission v. Papercraft Corporation.

Q Thank you. In regard to this lawsuit, Mr. Folsom, have you been present during this trial?

A Except for one or two hours of one afternoon, I was present during the giving of the evidence.

Q And did you read the transcript of that portion of the trial in which you were not present?

A Yes, I did.

Q And did you read the depositions in this trial?

A Yes, I did.

Q And did you read the deposition exhibits?

A Yes.

Q And did you—

A Excuse me. I did not read completely all of the deposition exhibits; I skimmed the deposition exhibits.

Q Are you familiar with the Government and the defense statistical exhibits in this lawsuit?

[2453] A Yes, I am.

Q Professor Folsom—excuse me. Mr. Folsom, approximately when did you start work on this case?

A I believe it is about two months ago, when I first came to Chicago.

Q Can you give the Court an estimate of the amount of time that you have spent on this case?

A Approximately 300 hours.

Q Sir, based on your examination of the evidence in this case have you come to any conclusion in regard to competition, if any, between United Electric and Freeman?

A Yes, I have.

[2454] Q And what are those conclusions, sir?

A I conclude that Freeman and UEC were competitors.

Q And can you tell us on what you base that opinion?

A Mr. Camacia, in his deposition, indicated that UEC and Freeman were competitors.

Mr. Nugent, in his deposition, indicated that they were competitors by laying out the areas.

And the statistical exhibits of the Government indicate sales to common facilities, as well as common customers.

Beyond that, one of the defendants' exhibits shows

that Freeman was selling steam coal to Inland Steel in substantial quantities, 90,000 plus tons in 1964, and that UEC was selling steam coal in excess of 30,000 tons to the same customer.

Q And that would be in addition to the information set forth on the common customer charts which is for 1965, 1966, and 1967; is that correct?

A Yes.

Q Based on the evidence in this case, sir, have you come to any conclusions in regard to whether or not coal is, from an economic sense, a separate market?

[2455] A Yes.

Q And what are those conclusions, sir?

A I conclude that coal can appropriately be treated as a sub-market or separate market within the energy field.

Q And on what do you base that opinion, sir?

A A number of things. One, if I may first look at the fossil fuel market—let me begin by saying that there is certainly an energy market. One of the defendants exhibits in this case indicates that there is considerable inter-fuel competition, but that inter-fuel competition is greatest in areas where there are no native fuel resources, such as in New England. There is a specific example that it gives.

Within the midwestern region there are native fuel resources, namely coal in substantial quantities.

Professor Steiner indicated that oil was not a factor in the midwestern markets, during his deposition.

I believe the Steam Electric Plant Factors bears him out in this respect. It shows fossil fuels consumed in Illinois, of which 93 percent was coal by electric generating facilities. In Indiana 97 percent was coal. In west Kentucky 100 percent—excuse me. In Kentucky—west Kentucky is not broken down—in [2456] Kentucky, 100 percent was coal.

One of the Government exhibits indicates that in the—what they call the Eastern Interior Sales Province, I believe 97 percent of the fossil fuels were coal.

This is all for the year 1967.

Further, the evidence in this case indicates that there



is a substantial price differential between coal and gas and fuel—excuse me—residual fuel oil in much of that area.

As you began to get to the fringes of the area, the differential decreases.

The evidence in this case, I believe, indicates that the competition of gas, which is essentially making up the other 7 percent in Illinois, the other 3 percent in Indiana, is of a seasonal nature.

I think, given the seasonal nature of the gas competition that it is appropriate not to include it in a complete analysis of the coal competition.

Witnesses have indicated that the primary competition is the head-to-head competition between coal companies.

If I may address myself to the nuclear question, with the exception of Commonwealth Edison, and of [2457] companies in Minnesota, the far out portions of the Eastern Interior Sales Province, the companies indicated that nuclear was more expensive than was coal.

Further, the evidence in this case indicates that coal—excuse me—that nuclear is not competitive with coal. If the size of the generating unit is 500 megawatts or less, it is not competitive. There is one example of a plant of smaller than that capacity, a 60 megawatt plant which was to have come on line in 1965, but which, according to the deposition testimony is—I believe that is Mr. Abrahamson—is still not on line at the time of his deposition.

[2458] Q Do you recall any comment that Mr. Abrahamson made in regard to his utility's experience with regard to nuclear?

A He was unhappy; I believe, to be exact, he said that they had had a belly-full of the nuclear experience. That is, I think, understandable, given the size of the unit and the delay involved.

Another reason, and my final reason, for considering the coal as a separate line of commerce is that if we look at existing plants, it does not seem feasible from the evidence in this record to convert an existing plant to nuclear. There are some plants which might be converted to other fuels, but nuclear is certainly out in terms of a conversion.

Q Are there any indications to you, other than economic factors, that you have indicated in regard to looking at coal as a separate market? For example, Professor Steiner testified that—

MR. HEDLUND: Your Honor, I am going to object. I think this is getting into an unnecessary leading question.

THE COURT: He has not completed the question. Complete your question.

BY MR. CUSACK:

[2459] Q Professor Steiner indicated that the coal producers had trade associations and had certain publications, and so forth. Is this of any significant factor to you in the recognition of coal as a separate economic product?

A There are a number of organizations which deal with coal as an industry. I do not consider these as important as the price differential from an economic point about which I spoke. As Professor Steiner indicated, either in his deposition or in his testimony before this Court, one of the reasons for segregating a particular commodity and calling that commodity a market by itself would be based on a price differential, and I did see that price differential within the market.

[2460] Q In regard to the feasibility of the cost of nuclear energy, is there anything in the record in that regard from which you could make an estimate of the future extent of the nuclear commitment by the public utilities?

A I don't believe that I can make a good estimate of the future extent of the commitment of public utilities to nuclear beyond what is shown in the record, where you have projections of nuclear orders through 1975 or 1976.

I would say in that regard that this record is fairly clear that any nuclear plant which is going to be in operation before 1976 must have been ordered by this time.

Q Mr. Folsom, Mr. Corey of Commonwealth Edison testified that four of the Commonwealth Edison nuclear

stations were turn-key plants. Does this have any effect, do you think, on the nuclear commitment in particular of Commonwealth Edison, and may it change in the future?

A I don't believe that is in Mr. Corey's testimony. I believe that is in one of the defense exhibits, where they talk about the six—excuse me: seven—nuclear plants. Dresden No. 1, which Mr. Corey referred to in his testimony as a "Model T plant" and then there were four additional nuclear plants. One of the defendants' [2461] exhibits shows that those were ordered at a capital cost of approximately \$118 per kilowatt.

Mr. Corey indicated in his testimony that the current capital costs of nuclear are running about \$300 per kilowatt.

At the time that those four turn key plants were ordered, the cost of a coal plant was estimated at about \$120 per kilowatt. Today, Mr. Corey testified, the cost of a coal plant is in the neighborhood of \$220 per kilowatt.

Q When, in your opinion, from an economic standpoint, was there a merger of Freeman and United Electric? Do you have any views on that?

A The question of when there is a merger is, I believe, a legal one. I have an opinion on control and when that occurred. But when the merger occurred, I believe that is a legal question.

[2462] Q When in your opinion, from an economic standpoint, was control achieved over United Electric by the defendants?

A In late 1959.

Q Based on your examination of the record, what in your opinion were the anti-competitive effects, if any, of the control of United Electric by General Dynamics and Freeman.

A One is the structural effect. Both of these firms, the record shows, had been substantial competitors within the coal industry. The record gives a reason for believing that UEC would have continued as a substantial competitor within the coal industry. It might not have done as much strip mining in the future. The record gives some reason for believing that UEC would have gone into underground mining.

There are three things I note prior to 1959 in this respect. One is Mr. Kolbe, in letters written in response to people who inquired as to the interest of UEC in underground reserves—in his first two letters prior to 1966, he stated—

Q Excuse me, That is 1956, isn't it?

[2463] Q Is there any other testimony that you recall in the record in regard to the possibility of United Electric going underground if it were not affiliated [2464] with Freeman?

MR. HEDLUND: Your Honor, I did not hear the last part of that question.

THE COURT: Read the last part of that question.

(Record read by the Reporter.)

BY THE WITNESS:

A I recall Mr. Dorrance, I believe is the proper name, in his deposition indicating that Mr. Utterback had told him that UEC was going underground. I do not recall the date of this, hence I hesitate to say this occurred prior to 1959.

Q Mr. Folsom, the defendants contend that the Greater Chicago Air Quality Control Region, which the evidence shows receives coal from Fulton-Peoria, Springfield, Belleville, Southern Illinois, West Kentucky, and Indiana—they contend that the Greater Chicago Air Quality Control Region is, from an economic standpoint, a separate market.

In your view do you believe this is correct?

A No, I do not believe that is correct.

[2465] Q What is the reason for that, sir?

A One, other areas than Chicago are going to have air pollution controls, according to the information in this record. Separating out one market on the basis of air pollution controls does not seem to me to be appropriate.

Q The defendants also contend, Mr. Folsom, that Commonwealth Edison Company at its plants, wherever located, and the record shows that it has major coal-fired



stations at Kincaid, south of Springfield, near Pekin, Dixon, Rockford, Waukegan, State Line, Chicago, and in Will County—that Commonwealth Edison Company is a separate geographic market. Do you have any comments on that?

A Yes. Three reasons are given by the defendants for treating Commonwealth Edison as a separate market. One, the size of Commonwealth Edison; two, the fact that Commonwealth Edison will be affected by air pollution control; and, three, Commonwealth Edison's commitment to nuclear.

I do not believe that it is appropriate from an economic standpoint to separate out a customer on the basis of its size. An analogy: it makes sense in talking, economic sense in talking, about the automotive parts [2466] industry, to talk about the original equipment industry and the replacement equipment industry. To treat General Motors as a separate customer, I do not believe makes economic sense.

Q You mean as a separate customer being a separate market?

A A separate market. It does not make economic sense. Two, in terms of the commitment to nuclear, virtually every utility official who testified either through deposition or from the stand, during the hearings on this matter indicated that they have considered all fuels in making a decision as to which one was the most appropriate. I think they would be derelict in their duty if they did not and that the public service commissions might well call them to task. All except Commonwealth Edison within the Indiana-Illinois area, I believe, indicated they found it much too costly.

Thirdly, in reference to air pollution control, virtually every utility official indicated their concern with air pollution.

Now, if we go to the location of specific plants, many of Commonwealth Edison's plants are located outside of the city limits of Chicago. The newspaper clippings, et cetera, which were put in by the defendants [2467] indicate that Commonwealth Edison's greatest concern is within the city limits of Chicago.



Q As you will recall, Mr. Folsom, the defendants have attempted to set up various geographic markets. They have a geographic market after excluding Commonwealth Edison Company and shipments to the Chicago Air Quality Control Region; they have a geographic market for the Springfield area, for the Belleville area, for the southern Illinois freight rate district, and for the Fulton-Peoria freight rate district.

Based on that, do you have any opinion on whether or not these geographic markets which they have argued for make economic sense?

A Yes, I have an opinion.

[2468] Q And what is that, sir?

A Since I reject the separation of the Chicago Air Control Area and of Commonwealth Edison, these markets do not make any economic sense unless one does completely separate out those areas.

The testimony in this case, as well as the statistical evidence, indicates that a very large quantity of coal, relatively, moves out of each of these districts to other areas primarily to Commonwealth Edison sometimes within the area, or to the Chicago Air Control Region.

Mr. Camicia testified that the majority—usually the majority of the coal is sold outside of the freight rate district in which the mine is located.

Q The Government contends that one of the relevant geographic markets in this lawsuit is what is referred to as the Eastern Interior Coal Province, which is mining districts 9, 10 and 11, what we consider to be a producing area. This is made up of the coal mines located in Illinois, Indiana, and west Kentucky.

Is there any evidence in the record which would indicate to you that the Eastern Interior Coal Province is a proper economic—is a separate economic producing area?

A A separate economic producing area. There [2469] is physical information which indicates that it is a separate producing area. The location of the coal field, and the separation between the coal field in this area and other coal fields indicates that.

There is evidence in the record that this is geologically a coal field.

**Q** The Government also contends that one of the geographic markets, relevant geographic markets in this case is an area designated as the Eastern Interior Coal Province Sales Area.

What are your views in regard to the validity of the Eastern Interior Coal Province Sales Area as being a proper economic market?

**A** I did not participate in the drawing up of any of the markets alleged by either the Government or the defendants in this case.

My job was to analyze the markets as contended by the defendants, and by the Government, and from that to decide which was the most appropriate market.

On that basis, I concluded that the State of Illinois was the most appropriate market.

The Eastern Interior Coal Province does seem to be an appropriate market. I, however, have some problems with the Eastern Interior Coal Province, namely, [2470] that coal is expensive to transport.

However, the evidence in this case shows that coal was transported for quite long distances. Mr. Abrahamson of the power company in Wisconsin, I believe, indicated that they have bought coal all over the midwest during the recent shortage.

Mr. Tarzy, who was once in the sales operation of UEC supported the midwest area as a market concept.

**Q** Would the fact that a high percentage of the coal consumed in the Eastern Interior Coal Province Sales Area was produced in the Eastern Interior Coal Province, that is, Illinois, Indiana and west Kentucky, have a bearing on whether the Eastern Interior Coal Province Sales Area is a proper geographic market?

**A** It would have a bearing, but it would not be a controlling factor.

The record shows more than 80 percent of the coal produced in the area is consumed in the area, and more than 80 percent of the consumption within the area comes from producers within the area.

**Q** In regard to the State of Indiana, sir, is there evidence that coal produced in Indiana is sold in Illinois, and coal produced in Illinois is sold in Indiana?

[2471] A I recall evidence that coal produced in Illinois is sold in Indiana.

I draw a blank as to whether there is evidence on coal being sold from Indiana into Illinois.

Q Assume, sir, that the Illinois coal producers collusively or otherwise raised their prices, while the Indiana producers' prices remained at a pre-collusive raising level.

Where then would the consumers of Illinois coal be most likely to turn, under those circumstances?

A If the price were raised enough to make it above the cost of transportation, there is a possibility of them turning to Indiana or west Kentucky.

There are problems in turning to Indiana in that, if there is collusion in Illinois, since you have the same mines operating in Indiana, the same companies, you are not likely to get a competitive price in Indiana.

To some extent, the same is true of west Kentucky, although there are companies, I believe, which operate in west Kentucky which do not operate in either Illinois or Indiana.

[2472] Q Does the record indicate, sir, that there are any trade associations limited to the producers located in Illinois, Indiana, and west Kentucky?

A The record indicates there is at least one trade association, the Midwest Coal Producers Institute, I believe.

Q And is that limited to producers operating in Illinois, Indiana and west Kentucky?

A I believe that is limited to producers in mining districts 9, 10, and 11, of which would be Illinois, Indiana and west Kentucky.

Q Mr. Folsom, the defendants contend that a number of shipments by Freeman and United Electric to the same customers, as well as to the same identical facility of a number of customers, are not in competition because Freeman shipped to these destinations and/or customers what is called "coal dust."

Do you have any comment on the economic validity of that argument?

A Yes.

Q And what is that, sir?

A I believe that the coal dust is certainly competitive with coal.

The record shows that these facilities [2473] buying coal dust cannot consume coal dust alone, but the record certainly indicates that each time they buy a ton of coal dust, in terms of equivalent BTU's, they are not buying a ton of coal sizes, screenings, if you will.

Now the proportion, or the displacement possible varies according to the utilities who testified here. Union Electric testified that they could take up to 60 percent dust, rather than screenings at one of their plants. One other facility indicated they could only take up to 10 percent dust. One other company—excuse me, not facility.

Q Is it of any significance to you in regard to this dust-screening coal argument in regard to the pulverization of coal as it is used in a number of the electrical generating plants?

A Well, the testimony indicated that the dust could not be used unless there was a coal pulverizer attached to the plant.

In that sense, unless the coal is being pulverized, the company could not buy dust as a substitute for screenings. But they are substitutes to the extent that the company buys dust, and hence are in competition to the extent that they can use dust.

[2474] Q Do you find it anomalous that the defendants argument that so far as the fuel requirements of a number of generating stations, oil, natural gas, and coal are competitive fuels, while they appear to contend that coal dust and other coal sizes are not competitive fuels?

MR. HEDLUND: I will object as to whether or not this witness thinks it is anomalous.

I think that question can be asked without going into that.

THE COURT: Do you have any comment?

MR. CUSACK: I will rephrase it, if you want me to.

THE COURT: Revise the question.

BY MR. CUSACK:

Q Mr. Folsom, the defendants contend that for the energy fuel requirements of a number of electrical gen-



erating stations coal, natural gas, and oil are in competition.

Do you find that argument, from an economic standpoint, inconsistent with their argument that coal dust and other coal sizes are then not in competition?

A Yes. I consider this, from an economic standpoint, trying to go in both directions, one to [2475] expand the market, and the other to restrict the market.

Q Based on the record in this lawsuit, sir, and based on your economic opinion, do you have any views in regard to what United Electric might have done but for its control by Freeman?

A Yes.

Q And what are these views, sir?

A Absent a merger, I see three alternatives facing the United Electric Coal Company.

One, they—

MR. HEDLUND: May I hear—well, your Honor, I'm sorry.

[2476] THE COURT: Proceed, Mr. Folsom.

BY THE WITNESS:

A One, they could mine themselves out of business.

I do not believe this is an attractive alternative to the company, based on the testimony of Mr. Kolbe and others. It does not seem to be the type of approach that a company with UEC's assets would take, giving that the customers are very valuable, or are a valuable asset.

Two, that UEC would make an intensive search for strip reserves.

I do believe that this record indicates that high quality strip reserves are relatively scarce in Illinois.

Mr. Kolbe, in his deposition, indicated that they might well turn to strip—might well have turned to strip reserves of a less desirable nature in their search for strip reserves.

Three, there is the possibility that the company would have gone into deep mining. We had the beginning of this approach prior to 1959.

\* \* \*

[2483] BY MR. CUSACK:

Q Mr. Folsom, Dr. Steiner indicates that the three indicia of competition are structure, conduct and per-



formance. Of those three indicia of competition what would you consider to be the most important?

A I consider structure the most important of those three indicia of competition.

MR. CUSACK: Your Honor, may I make a comment in regard to the question with regard to the concentration nationally and the concentration in the area? There is evidence in the record in this regard.

THE COURT: There is. I have not read it.

MR. CUSACK: It is the Netschert documents versus ours.

THE COURT: All right.

BY MR. CUSACK:

Q Why do you consider structure to be the most important indicia of competition?

A Because for short periods of time you might have collusive behavior, that is, bad conduct, even in an un-concentrated industry. Or you might have good [2484] performance within a highly concentrated industry. But if you have a concentrated industry, you have the potential of bad performance.

An example: the rubber tire industry was studied by Mr. Wilcox during the Temporary National Economic Committee's studies, and he stated that this was a highly concentrated industry which he found at that time to have good performance, because of an individual who acted as a maverick, Harvey Firestone. But Harvey Firestone and others die and you do have the potential of bad performance from the structure, and we have to be concerned about these potentials.

[2485] Q Going back to competition between Freeman and United Electric, there is a good deal of testimony in the evidence that the shipments from the Fidelity Mine in the Belleville District to the Shawnee Plant of the Tennessee Valley Authority were not in competition with the shipments from one of the Orient Mines of Freeman to this plant.

Based on the evidence in the record, what is your opinion as to whether or not the coal shipments from these two mines to this plant of TVA were in competition?

A The evidence in the record indicates that the two companies were under common control at the time of the shipments, and that it was shipped under a Freeman contract.

You might have a different situation if the two companies were not under common control.

The way the thing occurred in the record, I would not say that that particular shipment represented competition. It does show, however, that a coal company will often absorb freight, if you will, or take a lower price, whichever way you wish to look at it, in order to move into a more distant market or to a more distant customer, which is a better description, in order to [2486] keep his mine operating at something near capacity.

[2493]

. . . . .  
CROSS EXAMINATION  
. . . . .

BY MR. HEDLUND:

Q It also, does it not, provides a framework for potential competition among and between all three of those fuels.

A It does provide a framework for potential competition.

Q You are familiar with the two statements I just read you, are you not?

A No, I am not.

Q Would it refresh your recollection if I were to indicate to you that those two statements I just read you were from the Economic Report on Corporate Mergers of the Federal Trade Commission?

A Not really. That is a very thick report, as you know, Mr. Hedlund. There are so many statements in there, some of which I reviewed, some of which I did not, that I cannot remember every statement that is in there.

Q I understand, Mr. Folsom. You did indicate to me, Mr. Folsom, when we were provided this volume a couple of days ago, that you, in terms of, as it is referred to in the preface, a major contribution to this re-

port, were involved in the matters set forth in Chapter 5 and Chapter 8. You recall that, do you not?

A Yes, I do.

[2494] Q Then, directing your attention to Chapter 5 of that report on page 310, I would like to read to you the following:

"The impact of these mergers (referring to mergers involving coal companies and oil companies) on competition may be considered from a number of viewpoints. There is a high elasticity of substitution among coal, fuel oil and natural gas as raw materials from which energy is produced. This is particularly marked in the case of electric utilities which have constructed generating stations so they can ultimately consume any of the three principal fuels.

"Before expanding into coal, the petroleum industry occupied a dominant position as a supplier of natural gas as well as fuel oil. The merger trend that Continental-Consolidation set in motion could over time extend that dominance to coal."

Do you recall that appearing in Chapter 5 of the report by the FTC entitled "Economic Report on Corporate Mergers"?

A It sounds familiar.

\* \* \*

[2499] Q In other words, before you try to define the region in terms of the geographical sense, you try to determine where the competition takes place, or what the competition is, and then you decide or determine what geographical area that takes place in; is that not correct?

A Well, the first statement was as a theoretical statement.

Q Yes.

A Now, you are getting down to a practical application.

As a matter of practical application, you often wind up using areas in asking your questions simply because that is the way the data is often kept by the companies. But from a theoretical standpoint, the geographic area does not determine the market.

Q Thank you.

A The market is determined, then the geographic area.

Q Isn't it true, Mr. Folsom, that state boundaries are generally of little or no significance in determining relevant market?

And I'm talking economically.

[2500] A With exceptions.

In general, political boundaries of any type, state or otherwise, are not a good determinant of a market.

As I indicated earlier, the market is determined, then the boundary.

As a matter of practicality, you often wind up using a political boundary as your best approximation of the market.

Q Are you familiar with any laws of the State of Illinois that have any effect on a determination of a meaningful and relevant market for coal?

A No, I am not. I must admit I am not familiar with the laws of the State of Illinois at all.

There may be mine safety laws and things of this type; I just don't know.

[2501] Q Well, passing the laws that you say you don't know about, is there any other factor that you can name in Illinois that makes the political boundaries of the State a meaningful measure of the relevant geographic market for coal?

A No.

Q Then it would be your view, would it not, Mr. Folsom, that the opinion of the Hearing Examiner in the Kennecott case was correct when he stated, commenting on your testimony in that case—

MR. CUSACK: On what page is that, please?

MR. HEDLUND: It is page 193.

MR. CUSACK: I wish counsel would—

MR. HEDLUND: Page 172 of the original transcript.

MR. CUSACK: I would like to point out for the record that I would appreciate it, Mr. Hedlund, if you would let us know what documents you are going to use with Mr. Folsom on cross examination; then I could go a little faster.

MR. HEDLUND: I'm sorry.

May I have the beginning of my question?

THE COURT: Yes, read it.

MR. CUSACK: May I read along?

THE COURT: Is there any objection?

\* \* \*

[2505] Q And you testified you had spent about 300 hours [2506] so far in this case, prior to—or did that include the trial time?

A That included the trial time.

Q You came to Chicago a month before the trial started; is that correct?

A Approximately. I don't remember—wait a minute. I believe it was more than two months before the trial started, because there was a delay. I had thought I would be coming up about a month earlier, or two weeks earlier, or something, than I did. I don't remember the specific date.

Q Do you recall in Kennecott, do you not, that counsel for the Federal Trade Commission stated that you were not an expert in coal usage? You recall that, do you not?

A I don't recall it. If you say he stated it, I have no reason to question it.

[2507] Q He did so state it at pages 782 of the transcript, Mr. Kadish saying:

"Again I state that Mr. Folsom is not an expert in coal usage."

Was that true at the time?

A Yes.

Q Prior to that case, do you recall, page 772 of the transcript, being asked this question:

"Q How many weeks did you spend reading up on coal?

"A Weeks.

"Q Or days?

"A Approximately three months."

Do you recall being asked that and giving those answers?

A That in general accords with my recollection. Remember, this was a year ago, and I don't recall the specific



answers. That time would have been fresh in my mind at that time.

Q I understand.

[2516] Q You would also agree that a man should study the market for a very long period of time before trying [2517] to say that this is the market. Would you agree with that, too?

A Define "a long period of time." In general a man should make an intensive study if he is going to define the market.

Q Numbers alone do not define the market, do they?

A No, they do not.

Q And you have to know the buy-sell relationship, and you have to consider a number of other factors other than just numbers in defining a market, don't you?

A Yes, you do.

[2519] Q It is your understanding, is it not, Mr. Folsom, that metallurgical coal and steam coal are not competitive, at least for metallurgical coal uses, is that correct?

A Yes.

Q Of course, the Government statistics, none of them, separate that, do they?

A In the midwest area I did not see any Government statistics separating metallurgical coal.

Q So that in effect these statistics, if there is no separation, and if the statistics include both steam and metallurgical coal, they are combining within those statistics two entirely different and non-competitive products, isn't that correct?

A No. I don't believe that is correct. In this area, if I may comment, the Orient No. 3 Mine, for example, sells metallurgical or coal for metallurgical purposes. It also sells some coal for steam purposes. So it seems that within that particular mine—and I don't know whether that is typical of mines in the midwest—the coal which could be for use for metallurgical purposes also can be used for steam purposes. One of your exhibits also states this.

[2520] I don't know what the price differential is, et cetera. It is obvious that there is some coal that can be used for steam purposes that cannot be used for metallurgical purposes. It is not obvious the other way around.

Q What about with respect to United Electric? You know if it has any coal that can be used for metallurgical purposes?

A From what I saw of the data on coal characteristics at UEC, it does not have any coal that could be used for metallurgical purposes that it is currently mining. I did not see data on coal analysis of any possible reserves they might have.

[2521] Q With respect to coal produced in the State of Illinois, do you have any knowledge of what percent of that coal is sold for metallurgical purposes?

A No, I don't have a knowledge of the percent sold for metallurgical purposes.

Q What about the State of Indiana?

A No.

Q What about west Kentucky?

A No.

Q But it would be your conclusion, would it not, that metallurgical coal and steam coal are not part of the same relevant market?

A It would be my conclusion that metallurgical coal cannot be substituted for by steam coal. If, in fact, a substantial quantity of that which could be used for metallurgical purposes is being sold as steam coal, then it seems to me appropriate to combine the two in looking at the market.

Q The market for what?

A For coal.

Q For all coal, or for steam coal?

A For all coal.

Q If you were to look at the market for metallurgical coal, would you include steam coal in that?

[2522] A The market for metallurgical would be, I think, a sub-market, and you would not consider—it becomes so inter-related, I'm not certain that you wouldn't have to consider the steam market there, because the

utility, if this metallurgical coal is selling for about the same price on a BTU basis as the steam coal, the utility is competitive, in a shortage, even with the—in its purchase, even with the companies who are buying coal for metallurgical purposes.

Q Do you know what, if any, price differential there is between steam coal and metallurgical coal?

A No, I don't.

Q Do you recall being asked the question, and giving the following answer in the Kennecott case, at page 760, where you were asked as follows:

"Q Would it follow that they are not"—

MR. CUSACK: Just a moment, please.

MR. HEDLUND: I'm sorry. I will start again. Page 759 of your testimony.

[2536]

# AFTERNOON SESSION

2:00 p.m.

Q Well, then—all right, let me ask you, do you believe that the Eastern Interior Coal Province Sales Area constitutes a reasonable determination of an economic market?

A Looking at the various markets, I was not as happy with the Eastern Interior Coal Province, in spite of the high percentages, as I was—not as satisfied with the definition as I was with the State of Illinois. I think I indicated to you some of the problems I had with the Eastern Interior Sales Area, namely, the State of Indiana being a big problem.

[2537] Q I understand that. But my question is, do you think the Eastern Interior Coal Province Sales Area represents a reasonably good approximation of an economic market?

A Yes, I think it is a reasonable approximation, with some reservations.

Q You stated this morning, Mr. Folsom, I believe, that in defining markets you always have imprecisions?

A Yes.

Q I believe on Monday Professor Steiner also said that market definitions is not a council of perfection

and that his criticism of the Government's markets was not that they were less than fully perfect, but that they were less good than they should be.

Now, isn't it true, Mr. Folsom, as far as economists are concerned, that given two conflicting market definitions, both with approximations, that the task then for the economist is to determine which of the two makes the most economic sense?

A Yes.

Q You would agree with that?

A Yes.

Q Are you familiar with the concept of a unified market?

A Roughly.

[2556] Q You have referred to the competition in the east between all of the various forms of energy, because that is not a native fuel area. Wasn't that the concept or is that the phrase you used?

A Yes, that is the phrase which is in the exhibit DX-102.

Q And I believe you testified that the midwest, or, let's say, Illinois is a native fuel area; is that correct?

A Yes.

Q And it was your testimony that, based on costs in Illinois, that nuclear energy does not compete with coal; is that the thrust of your testimony?

A I think my testimony was that the utility people had indicated a substantial cost differential between nuclear and coal, particularly those located in the State of Illinois, with the exception of Commonwealth Edison, and that based on that price differential, and the fact that you could not use nuclear for less than a 500 megawatt efficiency, that I would separate them.

But at the same time I indicated that I did recognize that there was such a thing as an energy market.

[2563] Q I believe, Mr. Folsom, you stated that the evidence in this record from customers indicated that as far as they were concerned, the primary competition for their business was that provided by coal suppliers?



A If the record shows that, I misspoke; or else the record is incorrect.

I believe that what I saw in the record when the coal people were asked about their primary competition [2564] they mentioned first other coal companies, and that some of the exhibits, the publications which you have put into the record, speak of head-to-head competition and the most immediate competition being the head-to-head competition between fuel companies within the same line of operation, or with the same product.

Q This is what the coal producers said?

A The coal producers, and some of the publications.

Q Yes. What do the customers in this case say?

A The customers in this case all—all the utility customers have indicated that they consider all sources of fuel in making the decision.

Q There was nothing then that they considered their—the primary competition for their business was coal?

A They did not say that they considered the primary competition coal with reference to future facilities, certainly.

[2565] Q In fact, many of them said just the opposite, didn't they?

A They also said they would consider all things, and then make a decision. Many of them stated about price and what they assumed their facilities would be.

Q I would like to ask your opinion on what Mr. Corey said at page 1612 and 1613. I'm not going to read the entire answer. If Mr. Cusack wants to, he can get it on redirect.

I asked Mr. Corey the following:

"In your opinion, Mr. Corey, what is Commonwealth Edison's major concern with respect to competition among its fuel or energy suppliers?"

"A I guess it is to have adequate competition. And as the energy field gets more diverse, it is hopefully to continue to have effective competition between coal and oil, and nuclear. I believe that is one way of putting it."



Then he said:

"I really would hate very much to see that we had to turn to coal, oil, and uranium to just two or three major oil companies. We might then find that we did have a very distinct lack of competition."

[2566] MR. CUSACK: The word is "for coal," not "to coal."

BY THE WITNESS:

A I recall the context in which he said that, yes.

And I would agree with him, that I would hate to see only two or three companies selling oil, nuclear, and coal, that it would be of big concern, and not only from the standpoint of competition, but from the standpoint of the individual customers.

\* \* \* \*

[2572] BY MR. HEDLUND:

Q I gather, Mr. Folsom, it is your position as an economist, that from an economic standpoint, this merger took place in 1959?

A From an economic standpoint, I think control occurred in 1959.

Q And would you equate as an economist control with merger, or wouldn't you? I don't want to be playing games. I just want to find out where you come out on it.

A I do have a problem in equating that with a merger, and that problem is the minutes from General Dynamics in the early 1960's, where they were in the tight cash situation and were considering selling. So, mergers are not that easily revocable in general. That almost sounded at that time like General Dynamics looked at this as an investment, not complete control of the company.

Q You are basing that on the minutes?

A Yes.

Q You are disregarding the testimony of Mr. Nugent?

MR. CUSACK: I think that is an unfair characterization of Mr. Nugent's testimony, and on that basis I object.

MR. HEDLUND: I am asking.

THE COURT: He may answer. Objection is overruled.

BY THE WITNESS:

A My understanding is Mr. Nugent testified that [2573] it was his intention throughout that they merge. I may be wrong. If I am, I would be happy to be corrected.

Q In any event, I gather, Mr. Folsom, in terms of the structure aspect of this merger, you feel the structure within the industry as a result of this merger changed in 1959, not 1967?

A Yes, I do.

Q That, as you say, is the prime element of determination of the anti-competitive effect of the merger?

A The change in structure is a prime indicator. If there was not a change in structure, if you don't consider it as a change in structure in 1959, then I think what you wind up with is having a situation where from 1955 to 1966 you had almost a collusive action between two coal companies, because you had essentially the same board of management directing two coal companies, and I prefer to think that was not a collusion after 1959, that it was a more legitimate form of control.

. . . . .

[2578] Q Even a year after Mr. Kolbe is saying "underground mining is not our business," isn't that correct?

A Oh, yes. That is correct.

Q Is it your view of the record that Mr. Kolbe acquired these reserves for Amalgamated because he wanted to go into the deep mining business?

A You are talking about the reserves required specifically for Amalgamated?

Q Correct.

A I don't think there is sufficient information to indicate one way or the other whether he planned to go into the underground mining business, because he was buying those reserves for Amalgamated.

Q Do you recall Mr. Kolbe testifying as follows, at page 189 of his testimony:

"The Beaucoup field. We said we did not care to tie up money that would not be—for coal fields that might never be mined and certainly would not be mined for a long time in the future. But they said they would. Their position, of course, was different."

Do you recall that testimony of Mr. Kolbe?

A Very generally. There are 900 plus pages of Mr. Kolbe's deposition, Mr. Hedlund. I read each and [2579] every one of them, but that doesn't—would you read that again so I will have it in mind if you wish to ask a question about it?

. . . . .

[2581] Q Because if it had occurred after 1959, it is natural that it might occur because of the presence of Freeman, isn't that correct?

A There I have my interpretation of the record, namely that there was control and that it was being operated essentially as one company. Mr. Thorson disagreed with my characterization of the testimony. He was the director of UEC who did not feel it was being operated in that manner.

Q I gather, Mr. Folsom, that with regard to the disappearance of all these companies between 1957 and 1967, referred to as "other companies," the remaining companies in Government Exhibits—I assume that you agree that mergers by no means explain even a substantial portion of those disappearances.

A Yes, I do. You are talking about the smaller companies when you say "other companies."

Q Yes. With respect to Professor Steiner's testimony on that score, the two of you are in agreement, is that right?

A I think so.

. . . . .

[2582] Q Let me rephrase the question: If we assume that United Electric would not have acquired additional economically mineable strip reserves, or had not been able to acquire additional economically mineable strip reserves between 1959 and 1967, if they had been inde-

pendent and if we assume that if they had been independent they would not have gone into deep mining, I gather your testimony is that except for this change in structure in market shares, this common ownership did not have an adverse effect on competition?

[2583] A The change in structure which reflects the loss of competition between the two companies during that period and beyond, yes. Nothing beyond that.

Q With my two assumptions?

A With your two assumptions, of course.

Q Of course, you don't agree with those two assumptions, is that correct?

A No, I don't.

Q So you don't agree with the testimony that indicates that they could not during that period, would not have, even absent Freeman, that they would not have gone into deep mining, absent Freeman?

A No, I don't.

Q You do not agree with the testimony of Mr. Camicia?

A Did Mr. Camicia testify that absent Freeman they wouldn't have done either of those? I don't recall you asking him, nor do I recall the Government asking him that question. If he so testified, then I would state that I don't agree.

Q As far as Illinois is concerned, or the EICP Sales Area, assuming the Government's definition for the moment, I gather it would be your testimony that if United Electric could not in the future acquire additional [2584] economically mineable strip reserves to serve those markets and either could not or would not undertake deep mining successfully, that the common ownership of these two companies would have no future adverse effects on competition in those markets. Is that your testimony?

A I haven't been asked that question, but I will say that if you start from today and if you make those two assumptions, assuming that they don't open any more mines, most of the coal in their current mines are committed, et cetera, that UEC is not going to be in that situation a viable competitive force in this market, even if it is divested from General Dynamics.



Does that answer it?

MR. HEDLUND: Your Honor, might this be a good time to take a short recess?

THE COURT: A five-minute recess.

(There was a short recess, after which the following further proceedings were had herein, to-wit:)

\* \* \* \*

[2589] Q I would like to ask you another question based on these assumptions.

Assume that two other coal producers, two coal producers other than UEC and Freeman, who are within this leading company list for 1967 proposed to merge and assume that UEC and Freeman are independent, unaffiliated companies.

Now, assume that one of these companies—one of these companies that proposes to merge has an annual production of approximately 6 million tons and the other approximately 4 million tons.

I would like you to assume further that the combined company, thus, with approximately 10 million tons of coal production would range behind Peabody as the second largest producer in the Illinois and the Eastern Interior Coal Province, with more than 13.5 percent of Illinois production, and 7.5 percent of the EIPC.

I will also ask you to assume that this combined company had coal reserves exceeding those of the combined UEC and Freeman operations by approximately 70 million tons.

And, finally, I want you to assume that the combined company would operate 8 coal mines located in [2590] Fulton-Peoria, Mineral-Atkinson, Murdock, Belleville, southern Illinois, and the west Kentucky freight rate district.

On the basis of those assumptions, Mr. Folsom, I would assume that you would agree, or that you would believe that the merger of the two companies in question would lead to the structural changes which you have referred to as essentially similar to those of UEC and Freeman combination, and would pose a similar threat to competition.



A I would be bothered by that acquisition, and would want to investigate that particular merger, if I were in a position to make the policy decision. I would want to investigate a merger between any of the top nine companies in the Illinois—State of Illinois at this particular time. We had 17 of those companies in 1957; we are down to about 9,000, about 300,000 tons annually. We are beginning to get too small in number to depend upon a structure to give good competitive performance, given the differential in size, and the presence of the Peabody, and a 13.5 percent combined second company.

Q So I gather then that just on the facts that I have given you, you would not conclude that that proposed merger posed a threat to competition?

[2591] A I would conclude that it proposed sufficient threat to look at it.

Q And you would—

A I don't recall—

Q You would have to look further, would you not?

A I think that would be true of any acquisition, Mr. Hedlund. I would not jump at one fact, and say, on the basis of one fact, "I'm going to draw a conclusion about competition."

Q Even if that one fact was simply market share?

A If—will you add that both companies were viable competitors?

Q Yes, in the same market.

A If they both were viable competitors and if we talk about the same market and the same level of concentration, top four approximately 75 percent today, I think that I will change and say, "Yes, I would, on that one fact alone, that would be almost presumptive evidence of an anti-competitive merger."

I would still want more information. I would still want to look further.

[2595] Q Do you recall the deposition of Mr. Nicosin of Indianapolis—Indianapolis Service?

A I recall having read Mr. Nicosin deposition, yes.

Q Do you recall that he was asked this question and gave this answer:

"Does the presence of coal deposits and mines in Illinois and Kentucky serve as a restraint on the prices that Indiana coal producers can charge you?"

That was by Government counsel.

And there was an objection by me, saying that I did not understand the question.

But the question was repeated:

"Do you understand it?"

"A I am not sure that I do. Again I think the answer would be 'no,' in that transportation is such a big chunk of it, I don't see how a mine"—

There was an interruption here.

[2596] "—I don't see how mines way over on the other side of Illinois puts any restraint on Indiana."

Do you recall that?

A I think that is in accordance with my testimony though.

He mentioned transportation, and as I said this morning in terms of the price differential that if it was as great, or greater than transportation.

\* \* \* \*

BY MR. HEDLUND:

Q Yesterday, Mr. Cusack asked Professor Steiner if he knew of examples in analyzing markets where the facts with respect to a single company had in the past been viewed apart from other companies in order to secure a more meaningful and realistic economic appraisal.

I believe you may have testified this [2597] morning that you could think of no place where that sort of thing was done.

BY THE WITNESS:

A I can think of one place where essentially the company was defined as an industry by the Court. I'm thinking of the Alcoa case. And I don't recall any others on that.

\* \* \* \*

[2598] Q Do you know—I'm sorry. I will ask one further question.

[2599] Do you know whether Dr. Muller ever used that type of analysis?

A If you say he did, I will not question you. As I said, I wasn't there; I don't know.

Q You came in 1964?

A In September.

Q I gather your ultimate conclusion, Mr. Folsom, is that this merger or combination of the common ownership of these two companies will have an adverse impact on competition?

A My ultimate conclusion is that this merger has had an adverse effect on competition.

Now, as I stated earlier, if you were talking about divesting the company with no reserve, then a continuation of the—it seems to me from the economic standpoint—and again the competition—if you are going to divest the company with no reserves, either you are not going to have a gain to competition from the divestiture, and thus the continuation of the ownership would not be in that—given those two alternatives, adverse to competition.

\* \* \* \* \*

### REDIRECT EXAMINATION

BY MR. CUSACK:

\* \* \* \* \*

[2607] Q I hand you what has been received into evidence as Government's Exhibit 52, which is a chart entitled "1967 Sales of Coal in the Eastern Interior Coal Province Sales Area by Coal Producers Located in Illinois, Producing District No. 10; Indiana, Producing District No. 11; and Western Kentucky, Producing District No. 9."

I ask you to examine this exhibit, sir, and on the basis of the exhibit to tell us your opinion as to the validity of the Government's choice of the Eastern Interior Coal Province sales area as one of the relevant economic markets in this lawsuit.

[2608] A I do not believe that this exhibit will stand alone—I do not believe standing alone it will justify seeing the Eastern Interior Coal Province Sales Area as a market. It gives you some basis for this, in that the percentages of production sold within the area, production by the companies in the Eastern Interior Coal Province, is fairly substantial in terms of their sales within the area; but you have to have the testimony from the people about the fact that they buy coal all over this area, etcetera, to justify saying this is an economic market.

[2609] Q This does not show, however, does it, that 82 percent of the coal sold in 1967—correct that, 82 percent of the coal produced in 1967 was sold in the Eastern Interior Coal Province Sales Area?

A Yes, it does.

THE COURT: Let me ask this one question. Are you through with that? I would like to ask a question.

MR. CUSACK: Yes, your Honor.

THE COURT: Considering Government Exhibit 53, in that it covers the Production Districts 9, 10 and 11, is there any part or portion of that that you would consider would be, from an economist's point of view, a more relevant market?

THE WITNESS: Than the Eastern Interior Coal Province—

THE COURT: Yes.

THE WITNESS: From the economist's standpoint, I think the state of Illinois is a better definition of a relevant market than is this.

THE COURT: Thank you.

THE WITNESS: If I may add, it is because of the transportation factor.

THE COURT: Yes. Proceed.

\* \* \* \*

[2612] Q Mr. Hedlund, during your cross examination, spoke to you about a statement at page 310 of the Economic Report of the Federal Trade Commission, saying that:

"There is high elasticity of substitution among

coal, fuel oil and natural gas as raw materials from which energy is produced."

Isn't it true, sir, that this statement was referring mainly to the eastern seaboard of the country?

A I don't recall that I wrote that statement, Mr. Cusack, and I don't know what the author of that statement had in mind. I read that statement. I think that it is more applicable to the eastern seaboard.

Q Isn't it true, Mr. Folsom, that in the state of Illinois and in the Eastern Interior Coal Province Sales Area there is not a high elasticity of substitution among the coal, fuel oil and natural gas as raw materials from which energy is produced?

A Historically there has not been a high elasticity of substitution in this area.

\* \* \*

[2618] show it to counsel.

THE COURT: Any objection?

MR. HEDLUND: I have no objection to identifying it, but—

MR. CUSACK: I have to identify it first, your Honor.

THE COURT: I thought it was identified.

MR. CUSACK: I wanted to show it to him first.

THE COURT: I thought you meant it was identified before but that you had not offered it. Is that correct?

MR. CUSACK: I believe I talked to him about it, but I am informed by my co-counsel that I did not do it right.

THE COURT: We will accept Mr. Braun's statement. Have it marked for identification.

MR. CUSACK: I will ask the reporter to mark for identification as GX-142 a schedule entitled "Commonwealth Edison Company Cost of New Generating Units, Edison Exhibit 1.7."

(Said document was marked as GX-142 for identification.)

MR. CUSACK: The Government moves the admission in evidence of GX-142 for identification.

THE COURT: Any objection?

\* \* \*



[2619] Alcoa as being a situation where you had had a one company industry essentially.

Q Alcoa, then having a monopoly over the production of aluminum?

A Of primary aluminum ingots.

Q Mr. Hedlund asked you on cross examination with regard to whether or not you could group the mines in the Southern Illinois Freight Rate District with the mines in the West Kentucky Freight Rate District. The evidence in this case shows, sir, that in 1967, of the total of 46,710,000 tons of coal consumed in Illinois, 3,150,000 tons originated in West Kentucky and 1,088,000 tons originated in Indiana.

Would this indicate to you that Illinois was an economic market to the exclusion of West Kentucky and Indiana?

A That alone would not indicate that Illinois was an economic market. It would be one of the factors considered.

Q Mr. Hedlund asked you with regard to whether or not any of the generating stations of the Union Electric Company were located in Illinois. Would it refresh your recollection if I told you that the Sioux Plant of Union Electric was located at Alton, Illinois, [2620] and the Venice Plant was located in East St. Louis?

MR. HEDLUND: I am going to object. Mr. Cusack knows full well that the Sioux Plant is not located in Illinois. It is located in Missouri. There is evidence in the record—

THE COURT: Do you accept that correction?

MR. CUSACK: I was relying on Dr. Steiner when he said it was in Alton yesterday. Perhaps we are both wrong.

MR. HEDLUND: I believe Professor Steiner—well, if he did, the record will show what he said, but the facts are clear that the Sioux Plant is not in Illinois.

THE COURT: Will you accept that amendment and then let him answer the question?

MR. CUSACK: I will withdraw the question. Dr. Steiner and I are wrong.

BY MR. CUSACK:

Q You testified, Mr. Folsom, that on the basis of the fact that most of the United Electric coal has been sold at the present time, it appeared that the anti-competitive affects of merger already had occurred, is that correct?

A I don't think that is exactly what I testified to. Shall I say what I testified to? I testified that [2621] most of the loss of competition which would be in part the anti-competitive effects was that you had had a loss from 1959 to this date. I think that there is an additional loss in that you lost the potential. What I testified to was with respect to the future, that if you took a company without any reserves and made it an independent entity, it would not be a big stimulus to competition.

Q So, would one of the anti-competitive effects of this merger be that United Electric—that the owners of United Electric—had not added to its reserve base as its coal had been mined and monies had been transferred from United Electric to its owner? Would this be an anti-competitive effect of this merger?

MR. HEDLUND: Your Honor, I am going to object. Even on redirect examination I think this is an overly-leading question.

THE COURT: He may answer.

[2622] BY THE WITNESS:

A I would not look at the transfer of money, because that is a financial operation. I consider it an anti-competitive effect that UEC's position in the coal industry was not expanded, either through acquiring additional strip reserves of the quality they now have or going into deep mining. The transfer of money is incidental, insofar as I as an economist would look at this.

BY MR. CUSACK:

Q Would you concede, though, that if United Electric had remained a separate company it would have had substantially more funds available to it to go into under-

ground mining or to acquire additional strip reserves?

**MR. HEDLUND:** I am going to object, your Honor. I think he gave the answer to the question that Mr. Cusack asked—

**THE COURT:** Objection sustained.

. . . . .

1717

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

Civil Action No. 67 C 1632

[Filed June 7, 1972]

UNITED STATES OF AMERICA, PLAINTIFF

v.

GENERAL DYNAMICS CORPORATION ET AL., DEFENDANTS

NOTICE OF APPEAL TO THE SUPREME COURT  
OF THE UNITED STATES BY THE  
UNITED STATES OF AMERICA

Notice is hereby given that the United States of America, plaintiff herein, appeals to the Supreme Court of the United States from the judgment entered April 13, 1972, dismissing the complaint in this action. Appeal is taken pursuant to the Expediting Act of February 11, 1903, 15 U.S.C. 29.

/s/ John E. Sarbaugh  
JOHN E. SARBAUGH

/s/ Howard E. Shapiro  
HOWARD E. SHAPIRO  
Attorneys  
Department of Justice

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**SUPREME COURT OF THE UNITED STATES**

**No. 72-402**

**UNITED STATES, APPELLANT**

**v.**

**GENERAL DYNAMICS CORPORATION, ET AL.**

**APPEAL from the United States District Court for the Northern District of Illinois.**

The statement of jurisdiction in this case having been submitted and considered by the Court, probable jurisdiction is noted.

**December 11, 1972**